FINANCIAL TIMES

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Is the four-day week the future of work?
THE BIG READ, PAGE 17

There were 'huge management failures'
EXCLUSIVE INTERVIEW WITH FTX'S SAM BANKMAN-FRIED, PAGE 7

S Africa furore
Ramaphosa's fate in balance

Cyril Ramaphosa cuts a cheerful figure as he leaves a committee meeting of the African National Congress in Johannesburg yesterday.

The South African president is fighting for his political life after a damning report into a scandal over a theft at his game farm. The findings have seriously damaged his reputation as a reformer who came to power in 2018 on a pledge to restore clean government.

The ANC's most senior body will today debate the report, which was produced by a panel chaired by South Africa's former chief justice. Over the weekend Ramaphosa's lawyers said they were preparing to stage a fightback by challenging its findings.

The row comes just weeks before the party holds a leadership vote in which he had been widely tipped to win re-election for a second five-year term.

ANC to decide on leader page 3



Reuters/Sumaya Hisham

Brussels promises help for companies to offset impact of US green subsidies

- Von der Leyen vows EU action
- Shift in state aid rules pledged
- $369bn climate package risks trade war

HENRY FOY — BRUSSELS
SAM FLEMING — LONDON

The EU must "simplify and adapt" its rules on state aid to counteract the competitive effects of the new $369bn climate package in the US, European Commission president Ursula von der Leyen said yesterday.

Europe should "adjust our own rules to make it easier for public investments", von der Leyen said in her first response to Washington's green energy subsidy scheme, which EU leaders say risks fracturing transatlantic unity by luring European companies to relocate.

The measures have soured ties between Washington and Brussels and triggered a chorus of demands from EU states for a competitive response, fuelling fears of a trade war.

"The new assertive industrial policy of our competitors requires a structural answer," von der Leyen said.

The potentially far-reaching proposals from the head of the EU's executive underscore the scale of concern in Brussels over the US Inflation Reduction Act. EU and US officials are due to meet to discuss the topic today.

President Joe Biden has called the US legislation the most "aggressive action" his country has taken to confront the climate crisis. But European allies complain that measures such as tax credits and subsidies for products such as electric vehicles give US-based enterprises an unfair advantage and will encourage EU industries to relocate.

> Europe should 'adjust our own rules to make it easier for public investments'
> Ursula von der Leyen

Von der Leyen said that in response the EU must overhaul its public investment regulations and reassess whether "new and additional funding at the EU level" was required. Brussels should go on demanding the US adjusts the IRA to resolve contentious issues, she said.

"There is a risk that the IRA could lead to unfair competition, could close markets and fragment . . . critical supply chains," von der Leyen said.

The EU should "take action to rebalance the playing field . . . [and] improve our state aid frameworks".

In recent years the EU has taken steps to ease state aid rules, including in response to the Covid-19 pandemic and the energy crisis. But further changes would fuel concerns that extra spending by deep-pocketed countries led by Germany will skew the single market. Other capitals have largely exhausted their spare fiscal firepower.

Other key EU figures have also called for a collective response to the US move. European Council president Charles Michel, who represents the leaders of the EU's 27 member states, told the Financial Times that there should be a renewed debate on common financing.

The union's competitiveness is being hit by soaring energy prices caused by Russia's war against Ukraine and the IRA subsidies. Michel said that while some member states had the firepower to support embattled industries, other capitals were stretched and were making legitimate demands for a discussion on new EU money.

"It is good that some member states have the possibility to mobilise money to support economic development but it is very important to make sure it doesn't create distortions in the single market," he said.

The White House said there were "ways we can address Europe's concerns . . . through substantive consultations".

A spokesman said: "Both the United States and Europe can create good-paying jobs and tackle the climate crisis — and not at each other's expense."

EU energy supply risk page 2
Martin Sandbu page 19

Briefing

Macron angers allies with concession to Putin
French president Emmanuel Macron has been condemned for suggesting that the west needed to give Russia security guarantees after the Ukraine war.— PAGE 2

Iran morality police axed
Iran has in effect abolished its "morality police" in the face of protests following the death of a young woman in custody, a senior official has said.— PAGE 4

Italy clings to cash
Italy's far-right prime minister Giorgia Meloni is pushing back against digital payments that curb tax evasion but can also cost small businesses dear.— PAGE 2

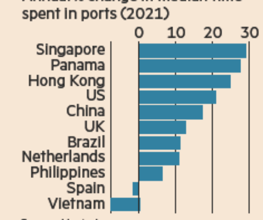
PwC targets EY partners
PwC will seek to exploit uncertainty at the Big Four accounting firm EY by poaching some of its rival's partners to drive US expansion.— PAGE 6

IT yields digital dividend
Leading money managers are hoping to create new income streams by developing digital investment platforms that can be sold to rivals.— PAGE 8

Bonds point to US rate cut
Traders in US government bonds are betting that the Federal Reserve will be forced to start cutting interest rates next year as the economy slows.— PAGE 6

Datawatch

Congestion at ports
Annual % change in median time spent in ports (2021)



Source: Unctad

Container ships face congestion at ports, despite a rebound in the global economy. The median turnaround time for container ships, which carry most of the world's manufactured goods, increased by 13.7% between 2020 and 2021



Battle over Disney's tax status set to go nuclear

Disney battles ▸ PAGE 8

Austria	€4.30	Morocco	Dh50
Bahrain	Din1.8	Netherlands	€4.30
Belgium	€4.30	Norway	NKr45
Croatia	Kn32/€4.25	Oman	OR1.60
Cyprus	€4.00	Pakistan	Rupee350
Czech Rep	Kc120	Poland	Zl 24
Denmark	DKr43	Portugal	€4.00
Egypt	E£80	Russia	€5.00
France	€4.30	Serbia	NewD530
Germany	€4.30	Slovenia	€4.00
Greece	€4.00	Spain	€4.00
Hungary	Ft1350	Switzerland	SFr6.50
India	Rup220	Tunisia	Din7.50
Italy	€4.00	Turkey	TL50
Luxembourg	€4.30	UAE	Dh23
Malta	€4.00		

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Beijing further relaxes Covid curbs in nod to growing public frustration

ELEANOR OLCOTT — HONG KONG
TOM MITCHELL — SINGAPORE

Chinese cities accelerated the loosening of zero-Covid restrictions over the weekend, raising expectations that Beijing could ditch the pandemic policy that has kept people isolated for nearly three years and battered the economy.

Several Chinese cities eased controls, even as Covid strains continue to circulate. China reported 31,824 infections yesterday for tests taken the previous day, a slight decline from Saturday as testing requirements were reduced.

Shenzhen and Shanghai scrapped the requirement for commuters to present PCR test results to travel on public transport, following similar moves by Tianjin, Chengdu and Chongqing. Some apartment complexes in Beijing indicated to residents over the weekend that if they tested positive they could quarantine at home rather than at a centralised quarantine facility, marking a significant relaxation of the curbs.

China's top-level leadership body, the politburo standing committee, has not made a formal announcement on its stance. Even so, President Xi Jinping appears to be steering the policy shift, said those familiar with the matter.

During a closed-door meeting with European officials on Thursday, Xi acknowledged the protests that rocked cities across the country last weekend, according to two European officials with knowledge of the talks.

Xi told European Council President Charles Michel, the first western leader to visit China since the protests erupted, that "frustrated" students were driving the protests after three years of zero-Covid policy. Rising anger at China's restrictions spilled over into a wave of nationwide discontent a week ago as residents in cities including Shanghai and Wuhan took to the streets.

Xi added that the Omicron strain driving the nationwide outbreak was less lethal than previous variants, but officials are worried about low vaccination rates among the elderly. Only about 40 per cent of people aged 80 or older have had three shots, the dosage required for Chinese vaccines Sinopharm and Sinovac to achieve high levels of protection against Omicron.

Economists warn that China's economy will not experience a fast rebound even if officials accelerate the reopening. Alicia García-Herrero, chief economist for Asia Pacific at research firm Natixis, said the "factors behind China's structural deceleration are still intact".

Additional reporting by Ryan McMorrow

World Markets

STOCK MARKETS

	Dec 2	Prev	%chg
S&P 500	4057.20	4076.57	-0.48
Nasdaq Composite	11401.26	11482.45	-0.71
Dow Jones Ind	34321.59	34395.01	-0.21
FTSEurofirst 300	1751.99	1754.46	-0.14
Euro Stoxx 50	3977.28	3984.50	-0.18
FTSE 100	7556.23	7558.49	-0.03
FTSE All-Share	4138.81	4141.04	-0.05
CAC 40	6742.25	6753.97	-0.17
Xetra Dax	14529.39	14490.30	0.27
Nikkei	27777.90	28226.08	-1.59
Hang Seng	18675.35	18736.44	-0.33
MSCI World $	2741.08	2720.89	0.74
MSCI EM $	978.30	972.29	0.62
MSCI ACWI $	635.51	630.92	0.73
FT Wilshire 2500	5296.26	5299.47	-0.06
FT Wilshire 5000	41355.71	41380.36	-0.06

CURRENCIES

	Dec 2	Nov 25		Dec 2	Nov 25
$/€	1.047	1.041	€/$	0.955	0.961
$/£	1.222	1.209	£/$	0.819	0.827
£/€	0.857	0.861	€/£	1.166	1.162
¥/$	135.475	139.250	¥/€	141.890	144.910
¥/£	165.496	168.408	£ index	80.039	79.452
SFr/€	0.986	0.985	SFr/£	1.150	1.145

CRYPTO

	Dec 2	Prev	%chg
Bitcoin ($)	16910.65	16976.38	-0.39
Ethereum	1277.32	1276.08	0.10

COMMODITIES

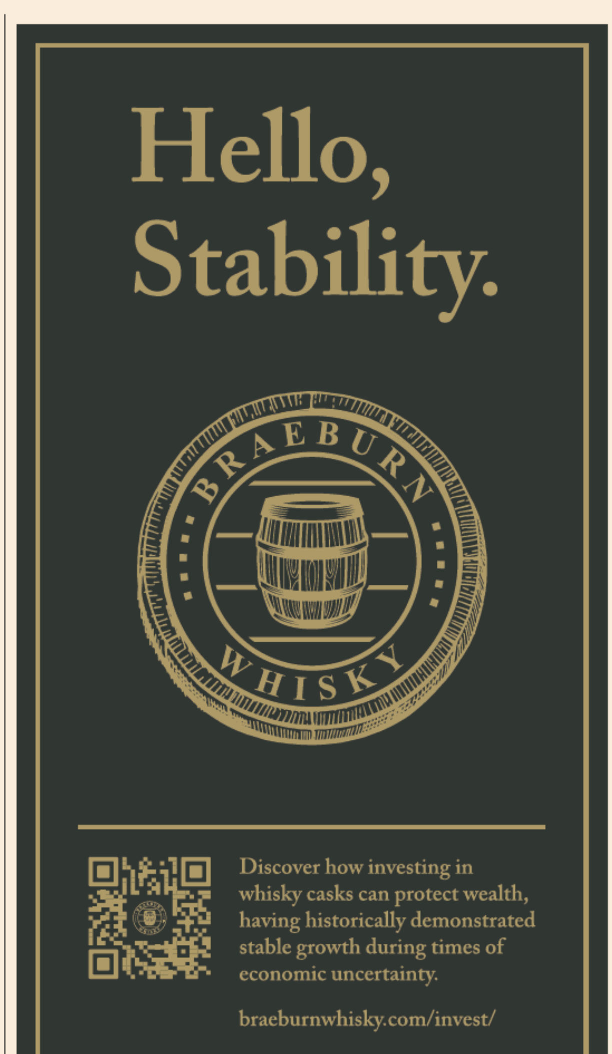
	Dec 2	Nov 25	%Week
Oil WTI $	81.39	77.69	4.76
Oil Brent $	86.84	84.91	2.27
Gold $	1803.15	1755.40	2.72

GOVERNMENT BONDS

Yield (%)	Dec 2	Nov 25	Chg
US 2 yr	4.35	4.28	0.07
US 10 yr	3.58	3.57	0.01
US 30 yr	3.61	3.68	-0.07
UK 2 yr	3.37	3.30	0.08
UK 10 yr	3.15	3.10	0.05
UK 30 yr	3.49	3.40	0.10
JPN 2 yr	-0.03	-0.03	0.00
JPN 10 yr	0.25	0.25	0.00
JPN 30 yr	1.49	1.51	-0.02
GER 2 yr	2.09	2.01	0.08
GER 10 yr	1.85	1.81	0.04
GER 30 yr	1.68	1.71	-0.03

Prices are latest for edition
Data provided by Morningstar

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INTERNATIONAL

Negotiations initiative

Kyiv and Baltics hit at Macron on Ukraine

French leader's critics reject suggestion of security guarantee for Russia

LEILA ABBOUD — PARIS
HENRY FOY — BRUSSELS
ROMAN OLEARCHYK — KYIV
RICHARD MILNE — OSLO

French president Emmanuel Macron faced strong criticism from Kyiv and in Baltic nations yesterday after he suggested Russia would need to be given security guarantees as part of future negotiations to end the war in Ukraine.

The comments, in an interview with French television channel TF1, came after Macron held talks with US president Joe Biden during a state visit to Washington, in which they discussed Russia's aggression in Ukraine and how they could continue to support Ukraine.

Macron said the two leaders had talked about the need for the US and Europe to prepare a "security architecture for tomorrow" for the region.

"This means that one of the essential points we must address, as [Russian] president [Vladimir] Putin has always said, is the fear that Nato comes right up to its doors, and the deployment of weapons that could threaten Russia," Macron said. "That will be part of the topics for peace, so we need to prepare what we are ready to do, how we protect our allies and member states, and how to give guarantees to Russia the day it returns to the negotiating table."

The comments drew strong criticism in Kyiv yesterday. "Someone wants to provide security guarantees to a terrorist and killer state?" Oleksiy Danilov, Ukrainian president Volodymyr Zelenskyy's national security chief, tweeted. Referring to the post-second world war tribunals, he added: "Instead of Nuremberg, to sign an agreement with Russia and shake hands?"

Kyiv, which is itself seeking postwar security guarantees, has rejected any suggestion Putin should be granted concessions after the conflict, given that Russia was the aggressor.

Critics have previously accused Macron of being soft on Moscow after he asserted that the west "should not humiliate Russia" over the war as it would still be a neighbour once the conflict was over. Alexander Stubb, the former prime minister of Finland, which has applied for Nato membership as a consequence of the Russian invasion of Ukraine, said he fundamentally disagreed with Macron.

"The only security guarantees we should focus on are essentially non-Russian," he tweeted. "Russia needs first to guarantee that it does not attack others. Only then can we begin discussions on [European security]."

Artis Pabriks, Latvia's deputy prime minister, added: "The idea that the Russian invasion [of] Ukraine can be ended by the west giving security guarantees to Russia is falling into the trap of Putin's narrative that the west and Ukraine are responsible for this war and Russia is [an] innocent victim."

Linas Linkevičius, former Lithuanian foreign minister, tweeted: "Russia has all security guarantees if it doesn't attack, annexe or occupy its neighbours. If anyone wants to create a new security architecture that allows a terrorist state to continue its methods of intimidation, they should think again."

A French official yesterday rejected the idea Macron was soft on Russia, pointing out he had condemned atrocities allegedly committed by the Russian military and sent French investigators to help war crimes probes. But a "new security architecture" was needed to help avert future wars, the official said.

Macron's comments also appeared to give credence to Putin's allegation that Nato had "expanded" towards Russia's borders and that this was a legitimate reason for the invasion. The alliance has robustly denied this claim.

Blackouts threat

Europe can withstand winter energy supply risk, says grid chief

SARAH WHITE — PARIS

The head of the French national grid has played down the risk of a breakdown in electricity flows and sweeping cuts to energy exports across Europe this winter, as the continent works to stave off power interruptions.

Xavier Piechaczyk said high gas storage levels, built up to bolster non-Russian reserves, had boosted power production capacity across the region, which should keep electricity supplies flowing as the system came under strain after a warm autumn.

However, the RTE chief acknowledged that falling temperatures and delays in repairing outages at France's fleet of nuclear power plants could still combine to trigger shortages and consequent power cuts, including in France.

That risk would be exacerbated if imports declined sharply, a scenario Piechaczyk said in an interview was "very, very improbable".

"The only thing that could threaten imports [to France] would be if our neighbouring countries produced less electricity from gas," Piechaczyk added.

Countries across Europe are struggling to address strains in their electricity networks as the region weans itself off Russian gas and are counting on each other to supply electricity at peak times.

France, normally a big power exporter, has become a net importer this year after a record number of outages at its nuclear plants, owing to maintenance work, unexpected corrosion issues, or cracking in the pipes of safety injection systems, that required repair.

Surges in demand from France to Germany and Britain usually occur at different times of day and countries have little incentive to cut each other off to prioritise their home market, Piechaczyk said, as they all need supplies from elsewhere. Grid operators across the region were working together to ensure fluid exchanges, he added.

France signed a deal with Germany last month to increase imports of electricity in exchange for Paris sending more gas to Berlin. That required Germany to raise the portion of interconnection capacity it uses for exports from about 30 per cent to 41 per cent, weeks earlier than it had planned, one sign of solidarity in the region, Piechaczyk said.

Britain has particularly relied on French nuclear power imports in recent years but has now become an exporter of electricity to France, putting strains on its own supplies. Britain and France have been urging households and businesses to cut their electricity usage to help reduce the threat of temporary blackouts. Germany's biggest grid operator, meanwhile, warned in October that its own exports to other countries might have to be curtailed if there were shortages.

By next year, repairs to France's nuclear plants should allow the country to go back to being a net exporter to the rest of Europe, Piechaczyk said.

Grid operators and governments are still bracing for possible targeted power cuts in the short term, however, especially if January and February are colder than expected, imports falter and the restart of French nuclear plants falls behind schedule.

Martin Sandbu See Opinion

Economy. Inflation

EU residents flock to food banks as poverty soars

Charities forced to close their doors to new applications even in bloc's richer nations

MARTIN ARNOLD AND ALEXANDER VLADKOV — FRANKFURT



A food bank in Berlin. More than a third of Germany's food banks have stopped taking new applicants beyond the 2mn they already help
Lisi Niesner/Reuters

With no job and speaking little of the language, Olena Vinykova has relied on her local food bank to cope with the "very hard" situation in which she finds herself since fleeing Ukraine for Germany seven months ago. If she had arrived any later, it could have been even worse.

Surging food and fuel prices mean millions more people in Germany are struggling to make ends meet, forcing many food banks to shut their doors to thousands of new applicants. That includes the one used by Vinykova in Friedberg, about 15 miles north of Frankfurt.

The former nurse, who left her husband and grown-up children in Bakhmut, now on the front line of Ukraine's war with Russia, asked the Financial Times to "say thank you" to the volunteers for their "amazing" work.

Across Europe food bank use is soaring as the highest inflation for a generation hits the region's poorest, who spend a greater proportion of their income on energy and food.

Charities from Spain to Latvia report 20-30 per cent higher demand than last year and expect a further increase this winter. In Bulgaria, one of the poorest countries in the EU, there was a three-quarters jump between September and October in people using the national food bank, according to the country's food bank director Tzanka Milanova.

More than a third of Germany's 962 food banks — called Tafel — have stopped taking new applicants beyond the 2mn they already help. It is the first time many have taken such a drastic step, after demand rose more than 50 per cent this year for access to the fruit, vegetables, bread and other essentials they collect from shops and donors.

"We could double the number of customers if we took everyone who asks," said Peter Radl, chair of the Friedberg food bank, which provides a basket of supplies every two weeks to 700 families, of which about 130 come from Ukraine. "But space is limited, we have a total of 120 baskets, and there is only so much our volunteers can do," he added.

"It is surprising for a rich country like Germany to have so many people who cannot afford to feed themselves properly," said Katja Bernhard, a board member of the food bank association for the Hesse region.

Yet soaring energy prices, triggered by Russia's invasion of Ukraine, have pushed more than a quarter of the German population into "fuel poverty" — defined as spending more than 10 per cent of income on energy — up from 14.5 per cent last year, according to the country's council of economic experts.

More than a fifth of the EU population was already unable to heat their homes sufficiently last year, before the latest price surge, according to the latest data from Eurostat, the EU statistics agency.

In November, eurozone price growth slowed for the first time in 17 months, dipping from 10.6 per cent to 10 per cent. But this was little consolation for people struggling to make ends meet, especially when average wages have risen only 4 per cent in the past year. Energy prices across the single currency area are still almost 35 per cent higher than a year ago, while food, alcohol and tobacco cost more than 13 per cent extra, according to Eurostat.

The price of some essentials has risen even faster. In the wider EU, milk prices have soared 43 per cent in the past year, while pork costs 55 per cent more and Japonica rice 68 per cent more.

In central and eastern Europe, the cost of staples has increased even more sharply. In Hungary, bread prices have risen by 80 per cent over the past year. There, the national food bank works via a network of charitable groups, which has expanded by almost a quarter to 530 this year. Its spokesman András Nagygyörgy estimates it helps 221,000 people, adding: "Since the start of the inflationary spiral, we have been witnessing an inflow of organisations."

Giovanni Bruno, president of the Italian food bank foundation, estimated an additional 85,000 people had sought its help this year.

Inflation has also led to a fall in the amount of food and money donated in several EU countries in recent months. Volunteers and directors in food banks across Europe say supermarkets have become more aggressive in discounting food nearing its sell-by date, leaving less for food banks to collect.

> 'It is surprising for a rich country like Germany to have so many people who cannot afford to feed themselves properly'

Oscarine Vonk, a volunteer at the Amsterdam food bank network, said it had benefited from a campaign appealing for wealthier people to donate the €190 the government is giving to all Dutch households to help with high energy bills in November and December.

Dutch food banks responded to the surge in inflation by increasing the limit on disposable income people can have to qualify as members to €300 per month and Vonk said they expected a 20 per cent rise in demand this winter.

"Groceries and electricity are much more expensive," said Adnan Ibrahim, who has been going with his wife to a food bank in southern Amsterdam for three years. "I have health problems — my wife too. I cannot work and we don't have enough money to pay the bills."



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Transactions fight

Italy's new PM pushes back against shift to digital payments

AMY KAZMIN — ROME

Patrizia Flammini's café does brisk business selling coffee, pastries and sandwiches in the heart of Rome, with prices starting at €1.20 for an espresso.

But she said her heart sank every time a customer tried to buy small pick-me-ups using a payment card, which gives the banks a cut of the sale price. "It's almost offensive," she said. "I make the coffee, I wash the cups, but [the bank's cut] is more than I earn."

Small business owners such as Flammini may soon be spared from accepting low-value digital payments if Italy's new rightwing coalition government has its way.

In her draft budget for 2023, prime minister Giorgia Meloni has proposed giving Italian merchants the right to refuse digital payments for transactions below €60. The government also intends to raise the ceiling for legal cash transactions from €1,000 to €5,000.

Meloni, who heads the far-right Brothers of Italy party, has previously criticised Italy's decade-old push to promote digital payments as an "illegitimate gift to banks" and a "hidden tax" on small businesses and families. In the run-up to her victory in September's election she vowed to push back.

But while many small businesses have welcomed the move, it could meet resistance from Brussels, which advised Rome to promote greater use of digital payments as part of its €200bn, EU-funded Covid recovery plan, to accelerate growth and put its strained public finances on a stronger footing.

Within Italy, some analysts and opposition politicians have expressed dismay at what many see as a retrograde step. "It's a mistake that will increase tax evasion," Carlo Calenda, leader of the centrist Azione Party, said.

Italy is among the lowest adopters of digital payments in Europe: the average Italian consumer uses cards for 85 transactions a year, compared with the EU average of 155.9, according to the Bank of Italy.

Italy's shadow economy was put at about €183bn in 2019, the equivalent of about 11.3 per cent of gross domestic product. Of that, tax evasion in otherwise legal activities is thought to account for €90bn. But digital payments, seen as a tool to reduce tax evasion, are growing. In the first six months of 2022, the total reached €182bn, a 22 per cent increase over the same period the previous year.

Successive Italian governments have tried to encourage the trend. In 2012, Italy made it theoretically mandatory for businesses to have point-of-sale machines for digital payments on their premises, although there was no penalty for non-compliance.

In December 2020, the coalition led by the populist Five Star's Giuseppe Conte launched a controversial cash-back scheme that offered a 10 per cent refund to consumers on all such transactions. The programme was criticised by the European Central Bank and subsequently scrapped by the then prime minister Mario Draghi's government.



Many small businesses in Italy prefer to receive cash over card payments

Businesses complain of the high costs involved in accepting digital payments. Transactions valued at under €5 usually do not carry any fee, but above that, they range widely. Bigger businesses pay 0.5-1.5 per cent of the transaction value to payment providers, while small businesses have to pay more.

So far, Brussels has not commented publicly on Meloni's plans. But in a statement last week the government said that "discussion with the [European] Commission are under way" and could influence the final policy.

Antonella Trocino, a lecturer in economics at Rome's Luiss University, believes concerns about fees should be addressed other than by simply trying to reduce digital transactions.

"It could be that the fees on [card] payments . . . are a little higher than in other countries, but in that case the solution is to negotiate with the bank system and align [them]," she said.

Additional reporting by Giuliana Ricozzi

INTERNATIONAL

Democrats have Georgia on their minds in fight to win Senate seat

US midterms run-off remains a close call and will set tone for 2024 election

JAMES POLITI — ATLANTA

At a revamped rail yard warehouse on the east side of Atlanta, former president Barack Obama delivered a jolt of his renowned campaign flair in an effort to help Democrats win the final contest of the US midterm elections.

Democrats performed far better than expected in congressional races across America last month as voters rejected many of the most extremist Republican candidates backed by former president Donald Trump.

But one pivotal contest in Georgia remains in limbo, pitting incumbent Democratic senator Raphael Warnock against Republican former American football star Herschel Walker, with a run-off election to be held tomorrow after neither candidate exceeded 50 per cent on November 8.

"Many of the most egregious, and potentially dangerous, and let's face it, somewhat crazy folks, election deniers, got beat, that's the good news," Obama told the crowd last Thursday. "I'm here to tell you we can't let up, we can't tune out, we can't be complacent."

A victory for Warnock, a pastor at the late Martin Luther King Jr's Ebenezer Baptist Church in Atlanta and who was first elected to the Senate after winning a run-off in January 2021, would be of tremendous importance for Democrats in Congress and President Joe Biden.

> 'We can't let up, we can't tune out, we can't be complacent'
>
> Barack Obama

It would give Democrats 51 out of the 100 Senate seats, compared with a 50-50 split that grants them a majority only because vice-president Kamala Harris can cast tiebreaking votes. The ability of any senator to block any of Biden's nominations or legislation would be limited, and Democrats would have an extra buffer heading into the 2024 elections.

But strategists from both parties say the race will still be close given Georgia is a politically even state. After being Republican terrain for years, victory for Democrats in the two Senate run-offs after the November 2020 election gave the party control of the upper house. Warnock prevailed in the first round this year by only 0.9 percentage points.

"There is an enormous level of energy and enthusiasm, and I think it's even greater than what we saw in November," said Abigail Collazo, a Democratic strategist who has worked in Georgia. "That said, run-offs are tricky. It's still going to be a very tight race. The Warnock campaign cannot afford to take anything for granted."

Brian Robinson, a Republican strategist in Georgia, said: "The Democrats have done a big push on early voting — they have banked hundreds of thousands of votes — but Republicans are catching up."

Although Walker is a sporting legend in the state, he has been engulfed in scandals ranging from domestic violence allegations to revelations about secret children and payments for women to have abortions. He recently made a bizarre reference to wanting to be a vampire rather than a werewolf; he has also faced scrutiny over a tax break he claimed for a primary residence in Texas rather than Georgia.

"He's weird, he's dumb, he's unqualified, he's a joke, that's the message," one former Republican state aide said of the closing attacks on Walker coming from Warnock and his campaign.

Obama certainly mocked the werewolf comments during his rally. "Walker has been talking about issues that are of great importance to the people of Georgia, like whether it's better to be a vampire or a werewolf," the former president said. "This is a debate that I must confess I once had myself. When I was seven. Then I grew up."

Walker has been endorsed by Trump, but they have not campaigned together ahead of the run-off. Trump's interventions in the 2022 elections have been blamed by many Republicans for spoiling what should have been a much stronger set of results.

Trump's announcement that he is seeking another term in the White House in 2024 — as well as the furore over his dinner last month with white nationalist leader Nick Fuentes — have not helped Walker either.

"A lot of Democrats understood full well how shockingly unqualified the opposition is and are coming out in droves," said Nick Shimkin, an organiser who was helping to turn out voters for Warnock in Athens, a city 70 miles east of Atlanta, who attended last week's rally.

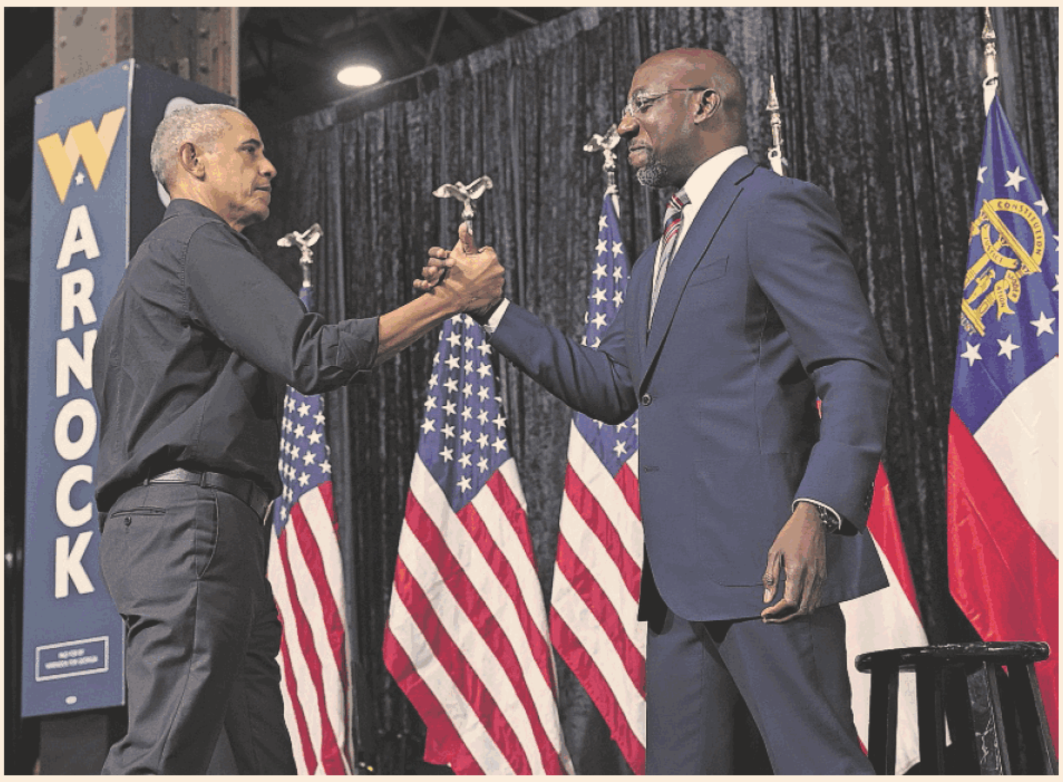
"I've canvassed, I personally phonebanked and donated money," said Metowi Willingham, a hairstylist who was also at the campaign event. "So I know it's gonna be a win," she added hopefully.

Walker has gained the backing of Brian Kemp, the popular Republican governor of Georgia who was re-elected in the midterms.

As Warnock campaigned with Obama, Walker was joined by Mike Pompeo, the former US secretary of state under Trump, to attack compulsory Covid-19 vaccinations in the military.

"What Biden and Warnock are doing to our warriors is immoral and it is an act of treason," Walker said.

But perceptions of Walker not being up to the job have been getting harder to shake off. "I don't think he is the right choice for us, just in terms of experience, and, you know, just some of the character issues," said Katharine Kelley, a centrist Democrat.



'Run-offs are tricky. It's still going to be a very tight race. The Warnock campaign cannot afford to take anything for granted'

Former president Barack Obama greets Georgia Democratic Senate candidate Raphael Warnock at a campaign rally in Atlanta this month
Win McNamee/Getty Images

South Africa

ANC to decide Ramaphosa's fate after cash-theft scandal

JOSEPH COTTERILL — JOHANNESBURG

South Africa's president Cyril Ramaphosa said the governing African National Congress would decide his fate this week, after he signalled he would fight back against a damning report into a scandal over a theft at his game farm.

The ANC's most senior body will today debate a report by a panel led by a former chief justice that suggested Ramaphosa might have committed serious misconduct in connection with the 2020 incident, even as his lawyers were preparing to challenge its findings.

"It is up to the national executive committee, to which I am accountable, to take whatever decision," Ramaphosa said yesterday, just weeks before the party holds a leadership vote in which he had been widely tipped to win re-election. He will attend the meeting, he added.

Ramaphosa has come under pressure to step down after the panel told lawmakers last week that it had serious doubts about his account of why he had kept half a million US dollars in cash stuffed inside a sofa at his Phala Phala game reserve before it was stolen.

The panel's findings have seriously damaged Ramaphosa's reputation as a reformer who came to power in 2018 on a pledge to restore clean government after years of looting of the state under his predecessor Jacob Zuma.

The parliamentary report said more cash appeared to have been stored unbanked at Ramaphosa's Phala Phala game reserve than the $580,000 that was stolen, and that he might have failed to report the theft through the proper police channels.

A legal rebuttal to the report was being drafted, the president's spokesman said on Saturday.

Ramaphosa's supporters have been urging him to launch a court challenge over what they see as serious flaws in the report. They complain that it overstepped its remit and relied on limited evidence. South African lawmakers are due to vote tomorrow on whether to accept the report and launch full-scale impeachment proceedings.

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Western restrictions

Opec+ ready to act as new Russia curbs start

Cartel vows to stabilise market ahead of sanctions prompted by Ukraine war

DAVID SHEPPARD AND TOM WILSON
LONDON

Opec and its allies vowed yesterday to stand ready to take "immediate" action to stabilise global oil markets a day ahead of the start of sweeping new western restrictions on Russia's oil exports.

Opec+, which is led by Saudi Arabia and Russia, decided not to make any immediate changes to production targets, but said the oil cartel was ready to "meet at any time" and could "take immediate additional measures".

The group's online meeting came a day ahead of what will be one of the most dramatic shifts in global oil markets in decades, when the EU will bar seaborne Russian oil imports in retaliation for Moscow's invasion of Ukraine.

At the same time G7 leaders have agreed to introduce a so-called price cap that aims to keep Russian oil flowing to countries such as India and China to avoid creating widespread shortages, but only if the crude is sold at less than $60 a barrel to crimp Moscow's revenues.

Russia has repeatedly said that it will not sell any oil to countries utilising the cap, and has instead quietly set about acquiring more than 100 oil tankers to form a "shadow fleet" of vessels to try to keep its oil flowing despite the western restrictions. But traders still expect Russia's oil exports to fall in the coming months as it may struggle to find enough new buyers outside the EU.

Russian deputy prime minister Alexander Novak reiterated yesterday that Moscow would not export oil that was subject to any western-imposed price cap, "even if we have to cut production somewhat".

The scale of the decline in Russian exports may determine whether oil prices soar or sink in 2023. Producers such as Opec+ are also worried about slowing demand if big economies fall into recession.

Analysts said it made sense for Opec+ to make no big changes to production policy before the full impact of the western restrictions on Russian oil could be ascertained in the coming weeks.

Amrita Sen at Energy Aspects, a consultancy, said Opec+ was facing a challenging market as there was also huge uncertainty around China, the world's largest oil importer. That increases the likelihood that Opec+ will meet again early in 2023.

Beijing has begun to ease its latest round of demand-sapping lockdowns amid growing protests against the measures, which are expected to drag on economic output.

The next meeting of the Opec Joint Ministerial Monitoring Committee, which has the power to call a production meeting, is due to take place in early February. Saudi Arabia's energy minister Prince Abdulaziz bin Salman al-Saud may have had one eye on the reaction of the White House, which in October accused Riyadh of aligning with Russia after leading Opec+ into a substantial cut in production targets of 2mn barrels a day.

The cut came shortly before US midterm elections in which the Biden administration feared petrol prices would play a big role. Saudi Arabia has argued that the cuts were solely due to concerns about the impact of a possible future recession on oil demand, but the move damaged relations with the US.

Additional reporting by Polina Ivanova in Berlin and Derek Brower in New York

Martin Sandbu page 19

Islamic dress code

Iran disbands its morality police after two months of protests

NAJMEH BOZORGMEHR — TEHRAN

Iran has in effect disbanded its morality police, which monitored women's clothing, following two months of protests sparked by the death of a 22-year-old woman who had been arrested for allegedly failing to observe the Islamic dress code.

The country's newswires said on Saturday that Iran's prosecutor-general, Mohammad Jafar Montazeri, had confirmed last week that "the same [organisation] which set up Guidance Patrol [the morality police] has now shut it down", although he did not identify the state body.

Although there has been no official announcement, the weekend report was the first time a senior regime figure has acknowledged that the force has been disbanded. In practice, the morality police have been absent from Iran's streets since the death of Mahsa Amini in mid-September.

Speaking in the holy city of Qom, Montazeri said that although the judiciary kept an eye on "public behaviour", it would not take a leading role in implementing the hijab law.

He said cultural activities had been "prioritised over other kinds of activities", seemingly distancing himself from the prosecution of women in connection with the Islamic dress code.

Street demonstrations erupted in September after the morality police stopped Amini, a Kurdish woman, in the capital Tehran for allegedly failing to properly wear the hijab.

Her death in police custody triggered protests in towns and cities across Iran that spiralled into the worst social unrest in years, and led to calls for the theocratic state to be overthrown and replaced with a secular government.

The legal obligation to wear the hijab — ratified after the 1979 Islamic revolution — remains in place, but an increasing number of women have appeared on streets, in restaurants and in universities in recent months without covering their hair and have not faced censure from the security forces.

In the wake of Amini's death many female protesters burnt their head scarves in the streets or cut their hair in a show of solidarity.

One 60-year-old man called Nima commented on returning to the country after two months abroad that Iran felt like "a different country", with women passing through passport checks without the hijab. "It already looks normal for all sides," he said, marvelling at the development.

Women have reported visiting state organisations without wearing the hijab, although state employees still have to adhere to the dress code.

Others remain more cautious owing to lingering fears of prosecution or because they feel uncomfortable. "It feels like being naked," said one woman. "I feel guilty that so many died for us to enjoy not wearing scarves," said another. "We didn't want this freedom at such a huge cost."

The remarks by the prosecutor-general came after protests in some big cities such as Tehran had subsided.

The National Security Council, the body responsible for suppressing the protests has for the first time confirmed that about 200 people, including security forces, have been killed in the unrest since September.

Latin America. Energy supply

Biden shift on Venezuela unlikely to cut oil prices

US eases sanctions amid Caracas negotiations with opposition and energy crunch

JUSTIN JACOBS — HOUSTON
JOE PARKIN DANIELS — BOGOTÁ



Pumping plans: Chevron and Venezuela's state oil company PDVSA (above) have touted deals to lift production
Ivan Alvarado/Reuters

Ports on the US Gulf of Mexico coast will soon resume shipments that have been absent for more than three years: tankers of Venezuela's heavy crude oil.

The impending restart of deliveries to US oil refineries reflects a shift in Washington's policy towards Caracas and a changing political landscape inside the US, analysts said. Whether it will relieve tight global energy markets is less clear.

Donald Trump, then president, cut off US imports of Venezuelan crude as part of a sweeping set of economic sanctions starting in 2019, aimed at dislodging leftwing Venezuelan president Nicolás Maduro from power in favour of opposition leader Juan Guaidó.

The US gave Chevron a licence to resume oil production through its joint ventures in Venezuela last week after Maduro's socialist government resumed political talks with the opposition in Mexico City. The Treasury department cited "concrete steps that alleviate the suffering of the Venezuelan people and support the restoration of democracy".

The move to ease restrictions on Venezuela's oil industry comes after the White House has spent months trying to find new sources of oil to help drive down fuel prices that soared after Russia's invasion of Ukraine. The talks are taking place as Maduro undergoes something of a rehabilitation in Latin America, which has recently elected a slate of leftist leaders — including in Colombia and Brazil, which were important backers of Guaidó in 2019.

In Mexico City, the Maduro government and the opposition signed an agreement allowing the release of foreign-held funds, believed to be close to $3bn, to be spent on energy infrastructure, health, food and education in Venezuela.

A founding member of the Opec cartel, Venezuela was once one of the world's biggest oil exporters. A decade ago its production was close to 3mn barrels a day, and exports flowed to US refineries designed to process its viscous crude grades. Billions of dollars flowed back into its economy.

The dilapidated Venezuelan oil industry's output has since declined to about 700,000 b/d. Last Tuesday, Chevron's manager for Venezuela, Javier la Rosa, met Tareck el Aissami, the head of state-run oil company Petróleos de Venezuela (PDVSA) and a close Maduro ally, where the two touted deals to lift production.

But any incremental volumes are not likely to be enough to sway global oil prices. Chevron's two producing projects in the country were pumping about 160,000 b/d before the sanctions were imposed, and their output had fallen to about 100,000 b/d now, said one person familiar with the group's operations.

With the sanctions lifted, "theoretically that can go up to 200,000 [b/d] fairly quickly, within a year or so", the person said, adding the company was redeploying local staff to their previous roles as it restarted operations.

Some analysts said Caracas could resist Chevron's efforts to resume shipments to the US because Washington's licence stipulates that the company must not pay taxes or royalties to the Venezuelan government.

"The issue with that is that it offers limited incentives for Maduro to allow cargoes to the US because they mainly will serve to pay the debt down to Chevron," said Francisco Monaldi, Latin America director at the Baker Institute for Public Policy at Rice University.

Chevron has accumulated more than $4bn in debt owed to it by PDVSA since sanctions came into force.

A more substantial increase in output would require tens of billions of dollars in investment and years of repair and development at the country's oilfields, which have wilted after years of theft, under-investment, and an exodus of skilled workers. It would also require further loosening of US sanctions.

Maduro in a press conference last week called the steps from the administration of President Joe Biden "very positive" but said he wanted "the total lifting of criminal sanctions over the oil industry", indicating he wanted to resume oil exports to the US.

Biden has prodded the domestic oil and gas industry to lift output, pressed the Opec+ group of producers to add supply and released about 180mn barrels from US emergency oil stockpiles.

> The US Treasury department cited 'concrete steps that alleviate the suffering of the Venezuelan people'

The administration in June also eased sanctions on European oil producers Repsol and Eni, allowing them to resume shipments from Venezuela.

Some analysts said a recent rightward lurch in the politics of Florida, historically an electoral battleground with communities of Venezuelan and Cuban exiles who advocate hardline policies against those countries' leftist leaders, was a factor in Biden's shifting Latin American policy.

Kevin Book, managing director at ClearView Energy Partners, a Washington-based consultancy, said that after "decisive re-election victories by Florida Republicans" such as governor Ron DeSantis, Democrats would feel less political pressure to hold a hard line against Caracas, especially "when crude supplies are tight".

US officials have warned the sanctions could tighten once more if talks with the opposition falter or there are signs Maduro is not following through on promised democratic reforms. Venezuela is scheduled to hold presidential elections in 2024.

Property

New York's 'zombie' office towers teeter as rising interest rates add to pandemic pain

JOSHUA CHAFFIN — NEW YORK

During a prolonged bull market fuelled by historically low interest rates and nearly free money, Doug Harmon and his team presided over record-breaking sales for many of Manhattan's trophy office buildings.

No longer. These days, Harmon, the chair of capital markets at Cushman & Wakefield, a real estate services firm, spends much of his time performing "triage", as he puts it.

The world's largest office market has of late endured the departure of big-spending Chinese investors, the rise of remote working prompted by Covid-19 and the economic fallout from the Ukraine war. Now there is mounting concern that the dramatic rise in interest rates will be too much for many owners to sustain and that a long-awaited reckoning is drawing near.

"There's a consensus feeling that capitulation is coming," said Harmon, who likened rising rates to petrol igniting an office firestorm. "Everywhere I go, anywhere around the world now, anyone who owns offices says: 'I'd like to lighten my load.'"

"We're going to see distress," said Adelaide Polsinelli, a veteran broker at Compass. "We're seeing it already."

Since January, shares of SL Green and Vornado, two publicly traded real estate investment trusts that are among New York's biggest office owners, have fallen by half.

Fresh signs of strain came last week. Blackstone, the private equity firm, told investors it would restrict redemptions in a $125bn commercial real estate fund.

It also emerged that Meta, the parent company of Facebook, would be vacating about 250,000 square feet of space at the new Hudson Yards development to cut costs. It and other tech companies had been among the last sources of expansion in Manhattan's pandemic-era office market.

Prognosticators have been forecasting doom for the office sector since the onset of the Covid pandemic, which has accelerated a trend towards remote working. According to Kastle Systems, an office security company, average weekday occupancy in New York City offices remains below 50 per cent. A particularly dire and oft-cited analysis by professors at Columbia and New York University estimated that the collective value of US office buildings could shrink by some $500bn — more than a quarter — by 2029.

The sector has so far defied such predictions. Leases generally run for seven to 10 years, so tenants have still been paying rent even if few of their workers have been coming to the office. In the depths of the pandemic, lenders were also willing to show leniency or, as some put it, to "extend and pretend".

But the sharp rise in interest rates may, at last, force the issue. Financing has suddenly become more expensive for owners and developers — if it is available at all.

Bob Knakal, chair of investment sales at JLL, sees a growing horde of "zombie" office buildings in Manhattan that are still alive but have no obvious future. The typical zombie may have been purchased generations ago and supplied monthly cheques to an ever-expanding roster of beneficiaries.

"Now the building is not competitive from a leasing perspective because it needs a new lobby and new elevators and windows and bathrooms," said Knakal.



Manhattan office occupancy levels have fallen sharply in recent years

If there is debt to roll over, lenders will require the owners to contribute more equity to make up for the building's declining value. "There's a reckoning that's going to come," said Knakal, "and I think it's going to be challenging for a lot of these folks to refinance."

That appears to be spurring a flurry of backroom discussions between borrowers, banks, private lenders and others.

Manus Clancy, an analyst at Trepp, which monitors commercial mortgage-backed securities, likened the situation to that facing shopping malls five years ago as their prospects deteriorated. Many ultimately fell into foreclosure. Whether an office loan could be refinanced, he predicted, would depend on the newness of the building, its occupancy levels and the length of the leases.

Some obsolete office buildings may be converted to residential, which, in theory, would help to ease New York City's chronic shortage of housing. But that is easier said than done, say many experts. It would require zoning changes. Even then, many offices may not be suitable for conversions — either because their floor plates are too large, or because their elevators are wrongly situated, their windows do not open or their neighbourhoods are unappealing. To make such projects worthwhile, owners would have to sell at deep discounts.

That has not happened — at least not publicly. "Nobody wants to be the first one to dip their toe in this because nobody wants to set a new low unnecessarily," said David Stern, founder of Townhouse Partners, a consultancy that performs due diligence for commercial real estate underwriters.

In the meantime, some recent transactions have hinted at the market's shift. In July, RXR and Blackstone sold 1330 Sixth Avenue for $325mn, down from the $400mn RXR paid in 2010. In 2014, Oxford Properties, a Canadian investment firm, paid $575mn to win a bidding war for 450 Park Avenue, a 33-storey tower. It was sold by a subsequent owner in April for $440mn.

"What is it worth today?" one broker asked. "Less than $440mn."


COLLECTION GRAIN DE CAFÉ
Cartier

Give me a break The unexpected perils and opportunities of heading off for a long sabbatical → PILITA CLARK, PAGE 20

Companies & Markets

PwC partners urged to poach from EY to fuel US expansion

- Big Four firm to seek 500 new hires
- Move to exploit rival's potential split

STEPHEN FOLEY — NEW YORK
MICHAEL O'DWYER — LONDON

PwC plans to quadruple the pace of its partner hiring in the US and take advantage of uncertainty at EY by poaching some of its rival's senior executives.

Partners at the Big Four accounting and consulting firm have been told that the hiring spree could hold down their share of profits in the coming year but would bring a competitive edge over the long run, according to people familiar with the plan.

The PwC partners have been urged to help win over executives from rivals, with a particular focus on EY, which is in the middle of a tumultuous decision over whether to split the firm. PwC's US leadership has told them it wants to attract EY partners with expertise in tax, cloud services, financial crime and environmental, social and governance advice among other areas, according to one of the people.

> 'All's fair in love and war. There's a concerted effort by us to unseat EY partners'

Although PwC had not set a target for the number of people it wanted to poach, it had said internally that there was "capacity" to bring in 500 at partner level in the US over the next 18 months, the people said.

Partners brought in from outside, rather than promoted internally, are known as "direct admit" partners.

PwC has hired 500 direct admit partners in the US over the past six years.

Votes by EY's 13,000 partners around the world on whether to split its consulting and audit businesses have been pushed back to next year, and the firm is still wrestling with who will be allocated to which side of the business.

EY's audit partners will get cash payouts if the plan comes to fruition and consultants will be given shares in a new publicly listed company, but their potential value is uncertain and the shares are not expected to vest for several years. Partners being paid in shares would also receive significant cuts to their annual pay. The prospect of cash or share awards is likely to make many partners reluctant to leave EY, however, and the firm says both sides of the business will grow faster after the split.

"We are hiring more than ever and we are also targeting direct admit partners from other firms," including from PwC, an EY spokesperson said, adding that 20 US partners had come from PwC in the past 18 months. "Our partners are excited about being leaders of the profession and leaders of their sector, and we are seeing no attrition, period."

PwC had 3,658 partners and principals in the US at the end of May, according to its latest purpose report, up from 3,509 the year before in a workforce that swelled to 43,795 from 40,052.

One partner said the effort to poach staff from EY extended beyond the US to areas including Germany, France and the Middle East, and even if it failed, it could force EY to pay more to retain the partners that were approached.

"All's fair in love and war," the person said. "There's a concerted effort by us to unseat EY partners, and if we don't unseat them then at least we disrupt them and push up their cost base."

A PwC spokesperson said the firm's "commitment to the multidisciplinary model and quality, partnership structure . . . are what attract talented professionals to PwC".

Currency relief Yen stages recovery against the greenback following multi-decade lows



Behrouz Mehri/AFP/Getty Images

Japan's yen bounces back from 32-year low
Against the dollar (¥ per $)



Source: Refinitiv

LEO LEWIS — TOKYO

Japan's yen has bounced back from a 32-year low as foreign investors trim bets against the currency and signs emerge that domestic institutions may soon start pouring money back in to their home market.

The currency has jumped more than 13 per cent since late October, when expectations that the US central bank will continue to aggressively raise borrowing costs sent the yen sinking to its lowest level since 1990.

Japan's government has deployed ¥9tn ($64bn) since September in an attempt to stabilise the yen, which has been among the world's worst-performing big currencies this year due to the Bank of Japan standing firm on its ultra-loose monetary policies.

But economic reports beginning in mid-November showing a slowdown in US inflation has fuelled hopes that the Federal Reserve may soon slow its rate increases, providing a big boost to currencies such as the yen. A growing number of FX analysts are now building the possibility of big yen pivots into their forecasts for next year.

Turning points that could reverse the trend of yen declines include a pause in US rate rises, a broad China reopening or a tweak in the BoJ's policy of pinning long-term borrowing costs at very low levels.

What had been striking during the extreme volatility this autumn, note analysts, had been the tendency of the yen's biggest moves against the dollar to occur during London or New York trading hours — a signal they were led by global funds playing the widening yield spread created as the US Fed increased rates and the BoJ stuck stubbornly to its ultra-loose policy.

But in this new phase, with just a few weeks left in 2022, the dynamics are very different. Certainly, say analysts, a part of the yen's recovery has been driven by global investors rapidly reducing their short yen positions — large bets on the yen remaining weak while the risk of US recession seemed high, along with the prospect of continuing inflation. More dovish recent comments from the Fed have convinced some that the US rate rise cycle might pause in 2023.

But more eye-catching, say analysts at JPMorgan, has been evidence that Japanese institutional investors including life insurers and banks are heavy participants in the yen's recent surge. For the past week, the dollar-yen pair has been heavily traded during the Tokyo trading session while relatively stable in London and New York sessions.

If a big pivot is coming, said JPMorgan's Benjamin Shatil, head of Japan FX strategy, the more material change would be a shift in Japan investor flows, particularly if investors and the corporate sector began to accelerate their build-up of fresh currency hedges against yen strength and divestment of foreign assets.

Traders bet on rate cuts amid slowing US economy

KATE DUGUID — NEW YORK
COLBY SMITH — WASHINGTON

Investors predict the Federal Reserve will cut rates when faced with a slowing economy next year, betting the US central bank is far closer to ending its historic monetary tightening campaign than it has signalled.

Traders in the US government bond market are wagering that the Fed will be forced to cut interest rates twice in the fourth quarter of 2023. This is despite protestations from chair Jay Powell and other top officials last week that the central bank will not reverse course on its plans to keep borrowing costs elevated even as it slows the pace of its interest rate increases.

Treasuries futures markets point to the Fed's benchmark policy rate peaking in May at 4.9 per cent before falling back to 4.4 per cent by the end of 2023. That implies roughly 0.5 percentage points of cuts.

Bets on interest rate cuts next year accelerated after Powell laid the groundwork for the Fed to end its string of 0.75 percentage point interest rate increases and downshift to a half-point rate rise at its meeting in December. Investors also looked past a stronger than expected November jobs report, which suggested little reprieve in inflation.

"I think it's safe to say the committee is not expecting to cut rates next year. So how do we explain the difference between that outlook and what we're expecting?" said Matt Raskin, head of US rates research at Deutsche Bank, which has forecast that the Fed will be forced to cut interest rates by 0.5 percentage points in December 2023.

"I think it boils down to market participants expecting a recession next year while the committee still has a softish landing in their forecasts."

Raskin cited the inversion of the yield curve — a widely used predictor of recession — among other signals.

That view is in line with the traditional pattern of rate-rising cycles: in every cycle since 1980 with the exception of 2004-06, the Fed has made cuts within six months of hitting the peak in interest rates.

"Typically they overtighten until something breaks. That's likely to be the case in this cycle as well, so we wouldn't dismiss a tweak at some point later on next year," said Margaret Kerins, global head of fixed income strategy at BMO Capital Markets.



Technology. Medicine

DeepMind spin-off to use AI in drug discovery

> Isomorphic Labs will adapt its protein prediction scheme to help devise novel treatments

CRISTINA CRIDDLE AND IAN JOHNSTON
LONDON

Alphabet-owned Isomorphic Labs is ramping up its operations by poaching pharmaceutical talent and opening a new office, as the artificial intelligence drug discovery start-up moves closer to securing its first commercial deal.

The UK-registered group was spun out of its sister company DeepMind, Google's AI unit, in November last year to focus on using AI technology to create new drugs to treat and prevent diseases.

Isomorphic is in talks with big pharmaceutical companies and is expected to announce a deal in the next few months, according to two people familiar with the plans. Its work capitalises on DeepMind's scientific breakthrough of its AlphaFold2 technology, which can be used to predict the shape of every protein in the human body with almost perfect accuracy.

Colin Murdoch, chief business officer at DeepMind, has been put in charge of setting up Isomorphic Labs — or "bootstrapping", according to his title on LinkedIn — working closely with Demis Hassabis, who is chief executive of both DeepMind and Isomorphic Labs.

"It takes about 10 years to take a drug [to market] and often most of them fail, sadly. And so, inspired by the work we did with AlphaFold, we took a deeper look . . . and basically built a conviction that there was a real opportunity here to apply AI to reimagine drugs discovery," said Murdoch in one of the company's first interviews on Isomorphic.

Isomorphic's expansion comes amid a surge in interest in start-ups promising to use AI to transform drug discovery, with funding in the UK and US in this area jumping to more than $1.6bn this year, up from $668.5mn in 2017, according to data from PitchBook.

When the AlphaFold breakthrough was announced in November 2020, DeepMind said it would try to use the technology to find treatments for Chagas disease and Leishmaniasis, two of the most deadly diseases in the world.

Murdoch said Isomorphic had not focused on a specific drug or disease. "The goal is actually to build an underlying platform which is . . . agnostic to those therapeutic areas," he said.

There are a number of "almost AlphaFold-scale" AI advancements the team are working on that would provide the underlying engine for the platform, he added.

To lead its work in drug discovery, Isomorphic has hired several top executives and staff from both scientific and pharmaceutical backgrounds, including GSK and AstraZeneca, as well as in machine learning, developing computer systems that can learn through data.

The company is also expanding beyond its headquarters in London to a second office in Lausanne, Switzerland, home to a host of leading pharma companies including Roche, Novartis and Bayer — and Isomorphic's chief technology officer, Sergei Yakneen.

Yakneen has previously worked at Sophia Genetics, a company that uses machine learning to identify tumours and other health conditions, and Amazon. Another executive working on Isomorphic is Miles Congreve, chief scientific officer, who previously worked at Astex Pharmaceuticals and GSK. It has hired several staff from DeepMind, as well as from BenevolentAI, Google and AstraZeneca.

"The goal of Isomorphic is to produce drugs which we can then partner with pharma on to get them out through into the clinic and out to people with clinical need," Murdoch said.

He said it was "beginning to think about what the right commercial path is, so it is very much on the cards for Isomorphic Labs. We have an amazing leadership team up and running and making fantastic progress."



Isomorphic Labs' chief 'bootstrapper', Colin Murdoch
Ben Peter Catchpole

The company said it was in talks with "many of the world's leading pharmaceutical companies", without providing further details. It expects to embark on partnerships as it scales up. Murdoch said Isomorphic would hire more staff next year. Isomorphic's talent acquisition lead James Girling recently sought to attract tech workers fired by Twitter in a post on LinkedIn.

While the AI drug discovery market has experienced growing interest in recent years, investment in the sector is not immune to this year's tech rout. Venture capitalist funding has fallen 15 per cent from $2bn last year, according to data from PitchBook.

Some in the medical sector are sceptical that AI drug discovery will fulfil its hype, pointing to the need to navigate strict regulations and integrate into dated healthcare systems. A recent Morgan Stanley report noted investors will need to see "solid evidence for real-world use cases for AI-enabled drug discovery". However, it added that this method of drug discovery could lead to an additional 50 novel therapies over the next 10 years, presenting a potential $50bn opportunity.

Isomorphic reported a £2.4mn loss for the 11 months to December 2021, according to filings from the UK's Companies House. This includes £470,455 in receiving contract research and development services from DeepMind as the company was launching.

Additional reporting by Hannah Kuchler and Madhumita Murgia in London

COMPANIES & MARKETS

Bankman-Fried admits 'we kind of lost track'

Founder of collapsed FTX crypto exchange speaks of mistakes and his role in financial decisions that brought down his empire

JOSHUA OLIVER — LONDON

Speaking from his bed in Nassau at around 3am on Saturday, Sam Bankman-Fried grappled with one of the questions at the heart of the collapse of his $32bn crypto empire.

The FTX founder insisted that he had walled himself off from trading and risk management at the Alameda Research trading firm, which he majority-owned, for "conflict of interest reasons" related to his role as guardian of customer assets as chief executive of the exchange FTX. But he also admitted, in an interview with the Financial Times, having had closer involvement in financial decisions at Alameda than he had previously disclosed.

The conversation, which the 30-year-old requested be held via video call in the small hours of the morning at his Bahamas residence, was part of a contrite media campaign that Bankman-Fried has launched in the past week.

The former mogul has freely admitted in several interviews to what he called "massive oversights", "huge fuck-ups" and a lack of "rigorous thinking".

The media blitz has puzzled many at a time when the circumstances of the collapse of FTX, one of the largest crypto exchanges, are still being scrutinised by at least 1mn creditors, criminal investigators and civil litigators.

Bankman-Fried told the FT he reasoned that keeping quiet could be seen as "tacitly admitting the truth of a lot of theories" that have proliferated online about his alleged wrongdoing.

"To the extent that there's a tactical piece of it, I think it's basically that things have gotten to the point where, frankly, there were a lot of conspiracy theories floating around that had no validity," Bankman-Fried said.

"And to be clear, at its core, I fucked up. I fucked up big, and people got hurt. And you didn't need a conspiracy theory to get there."

He faces accusations in a US lawsuit that his companies were a "Ponzi scheme". Executives running the company in bankruptcy have said in court filings that FTX appeared to have "conceal[ed] the misuse of customer funds".

Bankman-Fried has denied intentional wrongdoing, blamed his own "huge management failures" and said he did not fully realise the perilous financial state of FTX until days before it was forced into Chapter 11 bankruptcy in Delaware early last month.

He admitted that Alameda had been allowed to exceed normal borrowing limits on the FTX exchange since its early days. Core to Bankman-Fried's account of how FTX ended up with a roughly $8bn shortfall of client assets was excessive lending by the exchange to Alameda, which ploughed the money into venture capital investments and doomed bets on digital tokens.



Mea culpa: Sam Bankman-Fried has sought to apologise for the collapse of FTX but his proactive media campaign has attracted criticism Ting Shen/Bloomberg

Bankman-Fried deflected the FT's questions about the excessive borrowing and soured investments that ultimately sank Alameda, blowing a hole in FTX's finances, and would not be drawn on the legal consequences he may face. He said he deliberately avoided getting involved in Alameda's trading and risk management to avoid conflicts with his position as chief executive of FTX, and neglected to monitor the risk they posed to the exchange.

But he said that in early summer he participated in conversations in which Alameda's financial health and borrowing were discussed. Previously he had suggested he only "fully realised" its parlous position last month.

"I do remember that there were some discussions around Alameda's positions. I don't remember numbers from those. I don't remember numbers being said, I'm not sure they weren't. I think Alameda did some recounting then, or some checking in on the health of its position," he said.

He recalled at least one meeting in FTX's Nassau office following the crypto market crash in May where staff said that Alameda's access to third-party loans was being cut back and it might need to borrow more from FTX. He said he could not recall who participated.

"My sense of it at the time was something like people taking stock post-crash," he said.

"Alameda had a number of margin positions, open at various borrow-lending desks, generally net long positions," he said, and some fraction of these were transferred to FTX as other lenders withdrew credit, increasing Alameda's liabilities to FTX by around $6bn.

Asked how the large increase in Alameda's borrowing from FTX was approved by the exchange, he said: "I don't feel good about not knowing the answer."

He said the company did not have a chief risk officer monitoring its margin positions or rules about who needed to sign off on large changes in borrowing. "As a company, we kind of lost track of positional risk in a pretty big and pretty destructive way," he said.

Bankman-Fried also said he was involved in two of Alameda's largest uses of funds: the $4bn it poured into venture capital and the $3bn he says it spent buying out rival Binance's equity stake in FTX. "Those two add up to a pretty big number," he said, adding that the two uses of cash were "the least unsatisfying answer that I have been able to come to" in answer to the question of how Alameda disbursed billions in FTX's money.

> 'To be clear, at its core, I fucked up. I fucked up big, and people got hurt'

He said he did not know at the time exactly what funds came from borrowing rather than Alameda's trading profits. But he said the venture capital investments were "effectively, some of them, on margin". He added: "I regret that. I regret that quite a bit."

Bankman-Fried's attempt to account for what went wrong was laced with caveats and references to his incomplete memory. He cited lack of "confidence" in his answers at least a dozen times, calling other responses "idle speculation" or "shitty answers". At one point, he paused for half a minute with his head in his hands.

Some observers have interpreted his very public mea culpas as an honest attempt to recall a situation that rapidly spiralled out of control. Others find his explanations implausible.

Several former employees who spoke to the FT questioned his portrayal of FTX as a company that was led off a cliff by the well-intentioned bungling of its mostly youthful leadership team.

Ira Sorkin, the lawyer who defended fraudster Bernard Madoff, told Bloomberg that Bankman-Fried's media campaign was a mistake. "You're not going to sway the public. The only people that are going to listen to what you have to say are regulators and prosecutors."

But there are indications that it is having some effect. Hedge fund manager Bill Ackman this week tweeted: "Call me crazy, but I think [Bankman-Fried] is telling the truth."

Maxine Waters, who will preside over hearings on FTX in the US House of Representatives financial services committee later this month, said in a tweet that she "appreciates" Bankman-Fried's candour and "willingness to talk to the public".

But despite his public explanations, Bankman-Fried said he did not expect to win people over. "I'm not expecting positive sentiment at all," he said. "Like, I don't think I deserve that."

Industrials

Strong dollar hitting profits, says Posco

SONG JUNG-A AND CHRISTIAN DAVIES
POHANG

Posco has warned that a strong dollar and weak Korean won are inflating the cost of imported raw materials and dragging down profitability, at the same time as the company, one of the world's largest steelmakers, is grappling with subdued steel demand from the global economic slowdown.

The dollar's surge to a 20-year high has raised concerns about depressed global economic growth. Despite rallying in recent weeks, South Korea's currency has depreciated nearly 10 per cent against the dollar in 2022.

A property market downturn in China, the world's biggest steel market, has also weighed on Posco's earnings.

"The exchange rate is having a big impact on us as we have to purchase raw materials in dollars," said Kim Hag-Dong, the company's chief executive, at its headquarters in Pohang on South Korea's south-east coast.

"Our margin has been squeezed as energy prices go up, but we can't raise our product prices because of weak market conditions."

The operating profit margin of the world's sixth-largest steelmaker dropped to 3.6 per cent in the third quarter of 2022 from 20.3 per cent a year earlier, hit by lower steel prices and one-off losses from flood damage at its domestic plant following a typhoon in September.

"In the past, when the exchange rates rose, our export competitiveness was boosted. But now interest rates are also rising, so this hampers business activities, slashing demand," said Kim.

"Higher raw material prices are also causing concern to us, along with the sluggish economy," he added.

The 63-year-old chief is an industry veteran who has spent more than 30 years between the company's two main steelworks and is now in charge of leading its green transition.

> 'The exchange rate is having a big impact on us as we have to purchase raw materials in dollars'

Kim said he was worried that global steel demand was not picking up, predicting a 1 per cent increase next year, mostly in India and south-east Asia. He added he expected the steel sector cycle to recover in the second half of next year after hitting the bottom in the first half.

"We hope that the Chinese market situation will improve as lockdowns are likely to ease now that Xi's third term has begun," he said. "The Chinese property market downturn will have a big impact on us if the market deteriorates, but it is hard to predict how much worse the market will be."

The cautious optimism comes as Posco, South Korea's largest corporate emitter of carbon dioxide, accelerates its efforts to decarbonise in response to tougher regulations and customer demands.

Posco became Asia's first steelmaker to declare its ambition to go carbon neutral by 2050. It is working to use hydrogen instead of coking coal to melt iron ore and remove oxygen for steelmaking.

Kim said the use of green hydrogen for steelmaking could increase steel prices by as much as 40 per cent.

"I think low-carbon steelmaking will be possible in the long term," said Kim. "But production costs will rise in the process, so a consensus should be reached from investors and governments to end-use customers like automakers and shipbuilders to share the cost and responsibilities in order to make the transition possible."

Kim said the green transition was necessary to expand its market share in Europe, where steelmakers are more actively developing low-carbon technologies to meet tougher environmental regulations, while its US exports are restricted by import quotas.

"We've almost given up hope for US exports but we need to retain our foothold in the European market," he said. "If we don't reduce carbon emissions, we can't expand into Europe."

Kim added that Posco needed to build its presence in the US for its "many US customers like automakers" as Washington's regulation against steel imports is likely to become stronger.

"In order to retain our customers, we are thinking of setting up joint ventures there and are contacting many companies for this," he explained.

"It is getting harder to export steel to US automakers unless we produce it in North America," he noted.



Margin squeeze: a Posco steel mill in Pohang, South Korea, where its chief executive warned of the dollar effect – SeongJoon Cho/Bloomberg



Financials

Asset managers aim to build tech platforms

State Street and Amundi look to take on BlackRock for outsourced IT services

BROOKE MASTERS — NEW YORK
HARRIET AGNEW — LONDON

Money managers including State Street, Pimco and Amundi are pouring money into digital investment platforms in the hope of emulating BlackRock's technology business, which is bringing in new revenue even as falling markets hit fees from their core investment clients.

BlackRock entered the business of software as a service more than two decades ago. The world's largest money manager now makes nearly 8 per cent of its revenue from selling technology to rival asset managers and other financial institutions. Just as Amazon developed cloud technology for its own needs and then commercialised it, BlackRock built the Aladdin portfolio management system to manage its own holdings and started offering it to clients in 1999.

Now State Street and Amundi are trying to go head to head with Aladdin. All three platforms offer a package of services that can include allocating assets to the right portfolios, tracking changing values, measuring risk and linking investors to data and outside providers. That appeals to money managers trying to simplify their IT and cut the time wasted on repetitive tasks.

"Over the past 10 years the top 100 asset managers have been coalescing around a smaller set of technology vendors," said Alex Heasman of consultancy Alpha FMC, which helps investment managers to purchase IT. "Aladdin was absolutely in the right place at the right time . . . but it's not the only choice out there."

But most asset managers, faced with shrinking margins and falling fees, are in no position to build innovative technology in house. French firm Amundi calculates that at least €1.6bn in annual revenue is up for grabs just from banks and asset managers that need to replace their technology in the next few years.

For many years, BlackRock exploited the fact that it was the only big platform provider that also managed money. Its main rivals were Bloomberg, the US data company, and SimCorp, the Danish software group. So far this year, its tech division has brought in more than $1bn from more than 950 clients.

State Street and Amundi think they can win business from asset managers that want to cut costs through outsourcing but are reluctant to entrust key functions to a platform controlled by the industry's most formidable competitor.

State Street, which is a custody bank and an asset manager, entered the arena in 2018 with the $2.6bn purchase of Charles River, a technology firm with 300 asset management customers. Amundi's Alto system is smaller and newer, with just €36mn in revenue last year, but it has 42 clients and the company has set a 2025 revenue target of €150mn.

Guillaume Lesage, who heads Amundi Technology, said the bank believed it has two factors in its favour: its software was written specifically for cloud computing, rather than being moved there, and its European base appealed to financial groups that must comply with EU rules.

Mining

Canadian group triples forecast for lithium output

MICHAEL POOLER — SÃO PAULO

A Canadian company building a lithium mine in Brazil will begin commercial production of high-quality material for electric vehicle batteries next year, amid a supply shortage that has sent prices for the metal rocketing.

Sigma Lithium said it would start commissioning the Grota do Cirilo project in Minas Gerais state this month and aims to have the product ready for shipping by the end of April. At the same time, the Toronto-listed group revealed plans to almost triple its targeted annual output to about 100,000 tonnes of lithium carbonate equivalent (LCE) by 2024.

Sigma said this would place it among the top four global producers, alongside US-based Albemarle, SQM of Chile, and Chinese group Ganfeng Lithium.

"We see all the demand is there, significantly unmet demand, for battery-grade lithium in the next three years," said co-chief executive Ana Cabral-Gardner.

Lithium prices have risen tenfold to $75,000 a tonne since the start of 2021. A tight market has sparked a rush by carmakers to secure supplies of a commodity that, along with cobalt and nickel, is vital for making electric vehicles.

"With the advent of electromobility and all this excitement about lithium, the world needs new sources," said Daniel Jimenez, founding partner of consultancy iLiMarkets. "Whoever is producing lithium in the coming three years is going to make abnormally high margins."

> 'Whoever is producing lithium in the coming years is going to make abnormally high margins'

Investor enthusiasm has propelled a 275 per cent rise in Sigma's stock this year, giving the company a market valuation of C$4.7bn ($3.5bn). Its Brazilian development is among the first of a next generation around the world, many from junior mining companies.

"Sigma is uniquely positioned as one of really only three new greenfield lithium projects that are coming online in 2023, and into a record high pricing environment," said Katie Lachapelle, an analyst at Canaccord Genuity.

Most lithium is extracted from hard rock mines in Australia and turned into a concentrate that is then generally refined in China. In Chile and Argentina, the metal is separated from salty brines pumped from underground and evaporated in man-made ponds.

McKinsey has forecast global lithium production will increase from 540,000 tonnes of LCE in 2021 to as much as 3.2mn tonnes annually by the end of the decade, depending on the pace of new project completion.

Sigma will have an initial capacity of 37,000 tonnes of LCE at its hard rock mine, which it calls the largest in the Americas and has 13 years of life.

Along with an upgraded estimate of "proven and probable" mineral reserves from 34mn to 55mn tonnes across its sites, Sigma also unveiled a $100mn debt facility provided by UAE-based shareholder Synergy Capital to help fund expansion of a plant processing ore into high-purity lithium concentrate.

Market questions. Week ahead

China trade data to reveal pressures on economy

What will Chinese trade data tell us about the health of the economy?

Trade data due to be released on Wednesday will give markets a better read on how domestic and foreign demand have held up for the world's second-largest economy.

Economists polled by Bloomberg have forecast a year-on-year drop of 7 per cent in the dollar value of China's imports in November and a 4.4 per cent dip in imports, both of which would mark substantially sharper falls than in October.

Overshadowing the data is China's approach to managing the coronavirus. Chinese authorities have stopped short of any explicit changes to President Xi Jinping's zero-Covid approach but analysts say the language in official statements has eased following a wave of nationwide protests criticising top leaders for sticking with the economically disruptive policy when the rest of the world has long since moved on.

The outlook for exports in particular has darkened based on recent reports from both official and independent purchasing managers' indices in China, which revealed a marked decline in export orders last month as concerns mounted over growth in the US and in Europe.

"Weaker external demand is another headache for Chinese exporters," said Iris Pang, chief economist for Greater China at ING. "With even weaker external economic growth projected for 2023, it seems that there will be no immediate reversal of the weak trend for Chinese exporters any time soon." *Hudson Lockett*

Has US producer price inflation cooled further in November?

US producer price rises are expected to ease in November, providing fresh evidence that the Federal Reserve's drive to bring down inflation is working.

According to a survey of Bloomberg economists, the Bureau of Labor Statistics on Friday is forecast to report producer prices rose 7.1 per cent in November from the previous year, which would mark its slowest increase since May 2021. Excluding the volatile food and energy sectors, producer prices are expected to have risen by 5.8 per cent, a step down from 6.7 per cent in October, and the slowest pace since June 2021.

The producer price index measures what producers are paid for goods and services by wholesalers, showing trends in prices several stages before they reach the consumer. The consumer price index is more closely watched but investors and economists are looking at all data for any signs of changes in inflation.

The report will precede the Fed's next policy meeting, at which the central bank is widely expected to slow the pace of its interest rate increases, delivering a 0.5 percentage-point raise after a series of four consecutive 0.75 percentage-point increases. *Kate Duguid*



Tough rules: China has continued with its disruptive zero-Covid approach as other economies have moved on
Andy Wong/AP

What will Turkey's CPI data show about efforts to control inflation?

Turkey's red-hot inflation may show signs of cooling when the statistics agency releases its latest data today, more than a year after the central bank began slashing interest rates and driving up prices.

Annual inflation is expected to have fallen to 84.7 per cent in November, according to a Reuters poll, from 85.5 per cent in October.

That would mark the first decline in consumer price inflation in 18 months, as month-on-month price rises begin to slow, economists said.

Turkey still has one of the highest inflation rates in the world after its central bank has repeatedly cut its benchmark this year under pressure from President Recep Tayyip Erdoğan. The central bank has lowered rates by a cumulative 10 percentage points since late 2021 in an effort to boost the economy with cheap loans. The last cut came on November 24 and Turkey's benchmark rate now stands at 9 per cent.

"This is not disinflation once you remove the base effect," said Enver Erkan, chief economist at Tera Securities in Istanbul. "Disinflation would require the conviction to implement policies to fight inflation. Instead, we have loose monetary policy because the priority is growth, which means inflation will continue to be a problem."

> 'We have loose monetary policy because the priority is growth, which means inflation will be a problem'

Erdoğan wants rapid economic growth to help his chances in an election next year. He argues the unconventional view that high interest feeds inflation, rather than slows it, and has said a weaker currency will boost exports and create jobs.

The lira has lost almost 30 per cent of its value this year, hitting record lows against the dollar. But his experiment may be running out of steam.

Gross domestic product expanded 3.9 per cent in the third quarter, the statistics agency said last week, a sharp slowdown from a 7.7 per cent expansion in the previous quarter. And the cost of living crisis has driven support for Erdoğan's ruling party to historical lows as more middle-class Turks see their income fall below the poverty line, which stands at an average of about $1,300 a month for a family of four.

"Slower inflation does not mean that the income-eroding price increases will stop. When you go to the supermarket to cover your basic needs, you will continue to face higher costs," said Erkan. *Ayla Jean Yackley*

Travel & leisure. Reedy Creek dispute

Disney battles to preserve the powers of its kingdom in Florida

Self-governing conglomerate still has bargaining chips in culture clash with DeSantis

CHRISTOPHER GRIMES — ORLANDO

When Walt and Roy Disney were dreaming up their plan to transform 25,000 acres of Florida swampland into a utopian city and theme park in the mid-1960s, they wanted none of the oversight they faced from California authorities when they built Disneyland.

By the end of a highly effective PR push, Disney had got its wish: Florida handed the company the powers to essentially run a private government. Among the extraordinary rights granted to Disney by the Florida legislature in 1967 was the ability to construct a nuclear power plant and an airport on the property.

Disney never built the power plant or the airport around Disney World. But the company's legal right to do so could be a useful bargaining chip as Disney seeks to preserve its 55-year old "special taxing district" in Florida, known as the Reedy Creek Improvement District, which the state's governor wants dissolved.

This spring, Reedy Creek became an unlikely pawn in the culture wars as Florida governor Ron DeSantis battled with Disney, whose then chief executive Bob Chapek had criticised the state's law restricting discussion of LGBTQ issues in classrooms.

In what was widely seen as retaliation for Chapek's criticism of the legislation critics branded "Don't Say Gay", DeSantis signed a hastily written bill into law that is scheduled to dissolve Reedy Creek in June.

The governor's office has not detailed what will replace it, although a spokesman for DeSantis said last week that a "plan is in the works and will be released soon".

But there are concerns that the costs of assuming Reedy Creek's responsibilities — which include providing water, power, roads and fire services, all financed by a tax Disney levies on itself — will fall on Florida taxpayers. Similar fears surround the fate of its nearly $1bn in municipal debt, which was downgraded by Fitch ratings after the law was signed.

Richard Foglesong, a historian and political scientist at Rollins College, said Florida law was clear: the tax paid by Disney would fall to residents of nearby Orange and Osceola counties if Reedy Creek goes away. "This is not going to come to fruition," he said. "This will be repealed and forgotten."

DeSantis's spokesman was clear that "Disney's debts will not fall on the taxpayers of Florida".

A focus of lawmakers' discussions can be found on page 295 of the 1967 law that granted Disney the expansive powers it has wielded for 50 years.

Disney, the law says, has the right to construct and operate "plants and facilities . . . for the generation and transmission of power through nuclear fission and other new and experimental sources of power and energy".

Linda Stewart, a Democratic senator whose district includes parts of Orlando, told the Financial Times that stripping Disney of the ability to build a nuclear plant or an airport could be part of a new replacement bill — along with allowing the governor to appoint two members of the Reedy Creek board.

A key question is whether barring Disney from investing in infrastructure it has no intention of building will be enough for DeSantis, whose decisive re-election in November has made him an early frontrunner in the race for the 2024 Republican presidential nomination. "He can't go away and just give in" on Reedy Creek, Stewart said. "He's going to have to get something out of it."



Disney World is at the heart of the 'special taxing district' in Florida

Another potential factor is Disney's firing last month of Chapek, who had been an object of DeSantis's scorn.

Bob Iger, who led Disney for 15 years has stepped back into the CEO role for the next two years and is known for having a deft political touch. This week Iger told employees he was "sorry to see us get dragged into [the] battle" over Reedy Creek, adding that "the state of Florida has been important to us for a long time and we have been very important to the state of Florida".

But DeSantis hardly sounded conciliatory last week when asked on Fox News about Iger's comments. "Yes, they're a big powerful company but we stand up for our folks," he said. "I don't care what a Burbank [California] based company says about our laws."

But besides its status as Florida's largest employer, Disney still has several cards to play — chief among them its reputation for operating the park complex at a high standard. Reedy Creek's technocratic five-member board has few residents to answer to, allowing it to move quickly on decisions. "It's better that [Disney] runs it," Foglesong said. "They believe in expertise."

At a recent board meeting, a Reedy Creek official noted that the district led the state in solar energy production — with the help of an array of panels called Mickey — thanks in part to clean energy targets set by Disney.

Anna Eskamani, a progressive Democrat who represents Orlando in the Florida House, is a frequent Disney critic but agreed that it would be difficult for the public sector to maintain the standards of Reedy Creek. She noted that in addition to paying property taxes, Disney taxed itself at a rate that is higher than the nearby counties were allowed to charge. "When you go to Disney there are no mosquitoes because they have intensive mosquito control," she noted as an example of Disney's competence. "Orange County could not do what Reedy Creek does."

It is an argument that Walt and Roy Disney might well have made themselves.

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MARKET DATA

WORLD MARKETS AT A GLANCE — FT.COM/MARKETSDATA

Change during previous day's trading (%)

S&P 500	Nasdaq Composite	Dow Jones Ind	FTSE 100	FTSE Eurofirst 300	Nikkei	Hang Seng	FTSE All World $	$ per €	$ per £	¥ per $	£ per €	Oil Brent $ Sep	Gold $
-0.48%	-0.71%	-0.21%	-0.03%	-0.14%	-1.59%	-0.33%	-0.38%	-0.191%	-0.407%	-0.335%	0.234%	0.89%	2.83%

Stock Market movements over last 30 days, with the FTSE All-World in the same currency as a comparison

AMERICAS

S&P 500 — New York (Nov 03 - -): 3,759.69 → 4,057.20. Day -0.48% Month 7.92% Year -11.35%

S&P/TSX COMP — Toronto (Nov 03 - Dec 02): 19,241.27 → 20,395.02. Day 0.07% Month 6.56% Year -1.06%

Nasdaq Composite — New York: 10,524.80 → 11,401.26. Day -0.71% Month 8.35% Year -25.86%

IPC — Mexico City: 49,086.30 → 51,178.42. Day -0.04% Month 1.20% Year 1.08%

Dow Jones Industrial — New York: 32,147.76 → 34,321.59. Day -0.21% Month 6.80% Year -0.88%

Bovespa — São Paulo: 116,928.66 → 112,938.15. Day 1.92% Month -3.26% Year 8.28%

EUROPE

FTSE 100 — London (Nov 03 - Dec 02): 7,188.63 → 7,556.23. Day -0.03% Month 5.83% Year 6.05%

Xetra Dax — Frankfurt (Nov 03 - Dec 02): 13,130.19 → 14,538.07. Day 0.27% Month -0.07% Year NaN%

FTSE Eurofirst 300 — Europe: 1,620.65 → 1,751.99. Day -0.14% Month 7.16% Year -2.82%

Ibex 35 — Madrid: 7,868.90 → 8,382.60. Day -0.30% Month 4.80% Year -0.83%

CAC 40 — Paris: 6,243.28 → 6,742.25. Day -0.17% Month 6.54% Year -2.03%

FTSE MIB — Milan: 22,706.02 → 24,621.72. Day -0.26% Month 7.96% Year -6.68%

ASIA

Nikkei 225 — Tokyo (Nov 03 - Dec 02): 27,678.92 → 27,777.90. Day -1.59% Month 0.26% Year -0.66%

Kospi — Seoul (Nov 03 - Dec 02): 2,329.17 → 2,434.33. Day -1.84% Month 4.24% Year -16.05%

Hang Seng — Hong Kong: 15,339.49 → 18,675.35. Day -0.33% Month 21.00% Year -20.95%

FTSE Straits Times — Singapore: 3,102.51 → 3,259.14. Day -1.02% Month 4.24% Year 5.33%

Shanghai Composite — Shanghai: 2,997.81 → 3,156.14. Day -0.29% Month 6.30% Year -11.76%

BSE Sensex — Mumbai: 60,906.09 → 62,868.50. Day -0.66% Month 2.88% Year 9.01%

Country	Index	Latest	Previous
Argentina	Merval	170850.49	170311.55
Australia	All Ordinaries	7503.50	7554.00
	S&P/ASX 200	7301.50	7354.40
	S&P/ASX 200 Res	6071.50	6132.50
Austria	ATX	3207.50	3212.68
Belgium	BEL 20	3754.22	3697.81
	BEL Mid	9544.83	9500.26
Brazil	IBovespa	113055.04	110925.60
Canada	S&P/TSX 60	1242.59	1242.42
	S&P/TSX Comp	20539.99	20525.45
	S&P/TSX Div Met & Min	1537.51	1511.74
Chile	S&P/CLX IGPA Gen	28596.28	28290.03
China	FTSE A200	10254.45	10318.02
	FTSE B35	9000.71	8988.96
	Shanghai A	3308.06	3317.90
	Shanghai B	290.74	291.14
	Shanghai Comp	3156.14	3165.47
	Shenzhen A	2138.98	2138.48
	Shenzhen B	1153.45	1146.60
Colombia	COLCAP	1261.61	1260.21
Croatia	CROBEX	2013.05	2011.29
Cyprus	CSE M&P Gen	68.46	68.68
Czech Republic	PX	1198.62	1214.32
Denmark	OMXC Copenahgen 20	1815.30	1809.17
Egypt	EGX 30	13639.73	13259.26
Estonia	OMX Tallinn	1760.36	1761.20
Finland	OMX Helsinki General	11243.33	11194.89
France	CAC 40	6742.25	6753.97
	SBF 120	5172.71	5179.18
Germany	M-DAX	26183.85	25954.71
	TecDAX	3137.63	3134.82
	XETRA Dax	14529.39	14490.30
Greece	Athens Gen	916.48	922.42
	FTSE/ASE 20	2234.49	2250.37
Hong Kong	Hang Seng	18675.35	18736.44
	HS China Enterprise	6368.74	6384.90
	HSCC Red Chip	3539.74	3594.46
Hungary	Bux	45804.29	46368.37
India	BSE Sensex	62868.50	63284.19
	Nifty 500	15963.50	16003.95
Indonesia	Jakarta Comp	7019.64	7020.80
Ireland	ISEQ Overall	7294.05	7294.78
Israel	Tel Aviv 125	1912.00	1884.01
Italy	FTSE Italia All-Share	26671.69	26738.94
	FTSE Italia Mid Cap	40497.08	40451.23
	FTSE MIB	24621.72	24685.67
Japan	2nd Section	7228.27	7239.06
	Nikkei 225	27777.90	28226.08
	S&P Topix 150	1679.46	1707.76
	Topix	1953.98	1986.46
Jordan	Amman SE	2502.06	2492.90
Kenya	NSE 20	1649.99	1639.38
Kuwait	KSX Market Index	6633.44	6603.51
Latvia	OMX Riga	1115.47	1113.65
Lithuania	OMX Vilnius	947.78	950.51
Luxembourg	LuxX	1472.74	1475.15
Malaysia	FTSE Bursa KLCI	1481.80	1491.51
Mexico	IPC	51437.44	51457.55
Morocco	MASI	11022.18	11022.18
Netherlands	AEX	731.04	731.74
	AEX All Share	996.45	997.31
New Zealand	NZX 50	11641.85	11654.56
Nigeria	SE All Share	47656.64	47660.04
Norway	Oslo All Share	1017.37	1006.88
Pakistan	KSE 100	42150.10	42393.52
Philippines	Manila Comp	6489.65	6734.99
Poland	Wig	56199.81	56867.54
Portugal	PSI 20	5856.57	5927.23
	PSI General	4510.37	4569.53
Romania	BET Index	11924.70	11730.66
Russia	Micex Index	2436.57	2445.30
	RTX	1245.71	1212.57
Saudi-Arabia	TADAWUL All Share Index	10822.65	10822.65
Singapore	FTSE Straits Times	3259.14	3292.73
Slovakia	SAX	341.88	336.74
Slovenia	SBI TOP	-	-
South Africa	FTSE/JSE All Share	74322.91	75020.01
	FTSE/JSE Res 20	74020.33	75989.15
	FTSE/JSE Top 40	68237.46	68867.70
South Korea	Kospi	2434.33	2479.84
	Kospi 200	315.02	322.02
Spain	IBEX 35	8382.60	8407.90
Sri Lanka	CSE All Share	8769.73	8703.79
Sweden	OMX Stockholm 30	2129.47	2125.09
	OMX Stockholm AS	816.60	814.00
Switzerland	SMI Index	11198.13	11238.20
Taiwan	Weighted Pr	14970.68	15012.80
Thailand	Bangkok SET	1641.63	1648.44
Turkey	BIST 100	4962.97	4962.97
UAE	Abu Dhabi General Index	9222.93	9251.11
UK	FT 30	2532.00	2523.10
	FTSE 100	7556.23	7558.49
	FTSE 4Good UK	6805.50	6801.87
	FTSE All Share	4138.81	4141.04
	FTSE techMARK 100	6366.94	6385.89
USA	DJ Composite	11438.92	11473.07
	DJ Industrial	34321.59	34395.01
	DJ Transport	14512.12	14540.66
	DJ Utilities	972.04	980.28
	Nasdaq 100	11928.48	12041.90
	Nasdaq Cmp	11401.26	11482.45
	NYSE Comp	15745.87	15761.12
	S&P 500	4057.20	4076.57
	Wilshire 5000	40364.93	40534.41
Venezuela	IBC	15188.30	14696.26
Vietnam	VNI	1080.01	1036.28
Cross-Border	DJ Global Titans ($)	430.08	432.99
	Euro Stoxx 50 (Eur)	3977.28	3984.50
	Euronext 100 ID	1289.73	1292.77
	FTSE 4Good Global ($)	9933.34	9991.16
	FTSE All World ($)	417.62	419.21
	FTSE E300	1751.99	1754.46
	FTSE Eurotop 100	3455.40	3462.83
	FTSE Global 100 ($)	2566.30	2579.78
	FTSE Gold Min ($)	1770.66	1695.02
	FTSE Latibex Top (Eur)	4440.00	4432.20
	FTSE Multinationals ($)	2736.81	2709.06
	FTSE World ($)	758.25	761.35
	FTSEurofirst 100 (Eur)	4663.44	4669.51
	FTSEurofirst 80 (Eur)	5401.70	5407.98
	MSCI ACWI Fr ($)	635.51	630.92
	MSCI All World ($)	2741.08	2720.89
	MSCI Europe (Eur)	1782.59	1772.64
	MSCI Pacific ($)	2687.14	2617.94
	S&P Euro (Eur)	1781.32	1781.39
	S&P Europe 350 (Eur)	1796.08	1797.36
	S&P Global 1200 ($)	3015.01	3028.60
	Stoxx 50 (Eur)	3807.85	3817.12

(c) Closed. (u) Unavaliable. † Correction. ♥ Subject to official recalculation. For more index coverage please see www.ft.com/worldindices. A fuller version of this table is available on the ft.com research data archive.

STOCK MARKET: BIGGEST MOVERS

AMERICA

ACTIVE STOCKS	stock traded m's	close price	Day's change
Tesla	77.1	192.55	-2.15
Apple	38.6	146.65	-1.66
Nvidia	33.1	166.84	-4.52
Amazon.com	30.8	94.52	-0.99
Meta Platforms	23.7	122.79	2.35
Netflix	22.1	318.43	1.48
Microsoft	21.8	252.84	-1.85
Advanced Micro Devices	21.7	75.07	-2.41
Enphase Energy	10.8	332.70	18.70
Salesforce	9.7	143.67	-3.34

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Enphase Energy	332.70	18.70	5.96
Solaredge	310.20	14.43	4.88
Huntington Ingalls Industries	240.34	9.44	4.09
Albemarle	284.96	9.67	3.51
Northrop Grumman	548.39	18.09	3.41
Downs			
Eqt	39.84	-1.68	-4.05
Fortinet	53.28	-2.10	-3.79
Synopsys	345.85	-11.99	-3.35
Paypal Holdings	75.90	-2.63	-3.35
Wells Fargo & Co	45.35	-1.53	-3.25

Based on the constituents of the S&P500

LONDON

ACTIVE STOCKS	stock traded m's	close price	Day's change
Shell	195.5	2365.50	-16.50
Bp	182.4	480.90	-8.55
Astrazeneca	129.3	11178.00	-22.00
Glencore	125.1	558.30	1.60
Hsbc Holdings	95.2	498.50	0.60
Unilever	90.4	4178.00	-1.50
Gsk	86.3	1424.00	8.60
Diageo	84.2	3847.00	1.00
Rio Tinto	79.8	5584.00	-14.00
British American Tobacco	73.7	3408.00	17.00

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Aj Bell	390.00	30.00	8.33
Petrofac	87.60	6.50	8.01
Associated British Foods	1667.50	80.00	5.04
Aston Martin Lagonda Global Holdings	142.55	6.55	4.82
Ssp	218.50	8.50	4.05
Downs			
Energean	1365.00	-124.00	-8.33
Auction Technology	747.00	-41.00	-5.20
Rit Capital Partners	2160.00	-105.00	-4.64
Trainline	320.70	-15.10	-4.50
Carnival	696.60	-29.20	-4.02

Based on the constituents of the FTSE 350 index

EURO MARKETS

ACTIVE STOCKS	stock traded m's	close price	Day's change
Novartis N	382.4	85.36	0.04
Nestle N	362.9	114.64	-0.73
Asml Holding	317.4	573.10	-9.10
Roche Gs	292.8	312.73	-1.78
Cs N	265.2	2.99	0.25
Telefonica	240.6	3.58	-0.06
Totalenergies	240.5	58.88	-0.39
Eni	219.9	13.89	-0.20
Unicredit	181.6	12.54	-0.01
Ing Groep N.v.	167.2	11.44	-0.01

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Cs N	2.99	0.25	9.30
Kbc	55.16	2.34	4.43
Vonovia Se Na O.n.	24.02	0.60	2.56
Deutsche Post Ag Na O.n.	38.86	0.69	1.82
Ericsson, Telefonab. L M Ser. B	6.27	0.10	1.67
Downs			
Sanofi	85.63	-1.82	-2.08
Stellantis	14.60	-0.31	-2.05
A.p. M__ller - M__rsk A A/s	1976.53	-36.30	-1.80
A.p. M__ller - M__rsk B A/s	2020.23	-36.98	-1.80
Sika N	244.81	-4.36	-1.75

Based on the constituents of the FTSEurofirst 300 Eurozone index

TOKYO

ACTIVE STOCKS	stock traded m's	close price	Day's change
Fast Retailing Co.,	679.1	81360.00	-1420.00
Softbank .	659.9	6055.00	8.00
Toyota Motor	584.6	1971.00	-27.50
Tokyo Electron	576.6	46740.00	-160.00
Eisai Co.,	422.9	9555.00	-220.00
Sony	416.7	11180.00	-145.00
Nippon Yusen Kabushiki Kaisha	404.3	3041.00	-36.00
Keyence	386.3	56850.00	-1540.00
Nintendo Co.,	364.2	5726.00	-82.00
Mitsubishi Ufj Fin,.	357.1	738.70	-9.30

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Cyberagent,.	1288.00	49.00	3.95
Kao	5565.00	106.00	1.94
Sharp	1001.00	19.00	1.93
Shiseido ,	6104.00	70.00	1.16
Rakuten .	669.00	7.00	1.06
Downs			
Mitsubishi Motors	589.00	-37.00	-5.91
Ntn	269.00	-16.00	-5.61
Jgc	1815.00	-81.00	-4.27
Fujikura	1050.00	-46.00	-4.20
Daiichi Sankyo ,	4405.00	-192.00	-4.18

Based on the constituents of the Nikkei 225 index

UK MARKET WINNERS AND LOSERS

FTSE 100	Dec 02 price(p)	%Chg week	%Chg ytd
Winners			
Prudential	1030.50	9.2	-
Antofagasta	1434.50	7.0	5.5
Associated British Foods	1667.50	4.9	-17.6
Glencore	558.30	4.6	47.8
Endeavour Mining	1750.00	4.0	8.0
Rio Tinto	5584.00	3.8	14.0
Jd Sports Fashion	128.80	3.4	-
Ocado	670.40	3.2	-
Anglo American	3296.00	2.9	9.4
Intertek	4130.00	2.6	-
Scottish Mortgage Investment Trust	787.80	2.4	-
Burberry	2164.00	2.4	19.1
Losers			
Bt	120.70	-4.9	-
Melrose Industries	128.50	-4.5	-17.8
Admiral	2036.00	-4.3	-
Severn Trent	2735.00	-3.0	-7.4
3i	1318.00	-2.9	-9.8
Pearson	951.40	-2.8	57.1
Tesco	228.50	-2.8	-
Aviva	444.80	-2.6	-
Persimmon	1295.50	-2.5	-
Legal & General	254.90	-2.3	-
Phoenix Holdings	596.80	-2.1	-8.2
M&g	190.55	-2.1	-5.1

FTSE 250	Dec 02 price(p)	%Chg week	%Chg ytd
Winners			
Aston Martin Lagonda Global Holdings	142.55	12.2	-
Elementis	116.90	8.9	-
Vietnam Enterprise Investments	593.00	8.8	-21.7
Puretech Health	294.00	8.3	-1.5
Vinacapital Vietnam Opportunity Fund Ld	442.00	7.8	-
Aj Bell	390.00	7.8	2.9
Wizz Air Holdings	2363.00	7.2	-
4imprint	4280.00	7.0	52.3
Ascential	226.20	6.7	-
Just	77.50	6.5	-4.7
Fidelity China Special Situations	225.00	6.1	-
Rotork	310.80	5.4	-
Losers			
Wood (john)	131.15	-19.9	-
Auction Technology	747.00	-16.5	-49.7
Home Reit	52.90	-11.4	-
Synthomer	133.50	-9.6	-
Direct Line Insurance	206.80	-7.6	-
Petrofac	87.60	-7.1	-
Tullow Oil	42.22	-7.0	-7.0
Octopus Renewables Infrastructure Trust	97.70	-6.6	-
Ti Fluid Systems	126.80	-5.9	-
Abrdn	201.70	-5.9	-
Currys	77.30	-5.8	-32.5
Harbourvest Global Private Equity	2280.00	-5.8	-20.0

FTSE SmallCap	Dec 02 price(p)	%Chg week	%Chg ytd
Winners			
Record	90.00	17.3	7.7
Funding Circle Holdings	63.00	16.9	-
Topps Tiles	46.40	16.0	-
Newriver Reit	83.50	13.6	-5.0
Trifast	62.00	12.3	-61.3
Carr's	117.00	10.9	-24.5
Foresight Holdings	390.00	9.9	-7.6
On The Beach	125.80	9.6	-
Abrdn Equity ome Trust	354.00	9.3	-1.0
Up Global Sourcing Holdings	140.75	7.6	-
Trustpilot	105.90	7.1	-
Headlam	303.00	7.1	-
Losers			
Superdry	107.20	-15.3	-62.6
Pod Point Holdings	60.00	-13.0	-
Reach	107.00	-11.4	-
Capital & Regional	51.60	-11.0	-
Capita	24.44	-10.5	-
Restaurant	30.22	-10.1	-
Avon Protection	1070.00	-8.6	-6.6
Greencore	65.00	-8.3	-
Ao World	59.55	-6.9	-
Halfords	198.40	-6.7	-
Xaar	197.00	-6.6	9.4
Keller	725.00	-6.1	-

Industry Sectors	Dec 02 price(p)	%Chg week	%Chg ytd
Winners			
Industrial Metals	7777.96	4.0	22.3
Automobiles & Parts	1376.85	3.8	-62.0
Life Insurance	6782.73	3.0	-
Mining	11033.82	2.5	-
Beverages	29309.17	2.2	-5.7
General Financial	13096.05	2.1	13.7
Pharmaceuticals & Biotech.	20783.16	2.0	10.7
General Retailers	3289.24	2.0	13.7
Food Producers	5890.01	1.7	-12.5
Personal Goods	33797.10	1.6	-5.9
Food & Drug Retailers	4184.02	1.3	-4.4
Tobacco	36835.98	1.1	26.0
Losers			
Mobile Telecommunications	2311.21	-2.7	-
Nonlife Insurance	3189.30	-1.9	-2.6
General Industrials	6230.70	-1.7	-
Real Estate Investment Trusts	2303.48	-1.7	-
Electronic & Electrical Equip.	9328.08	-1.6	-
Industrial Transportation	3660.29	-1.6	-
Construction & Materials	6859.37	-1.3	-
Household Goods	10203.60	-0.9	-
Software & Computer Services	1898.87	-0.9	-
Industrial Engineering	14742.15	-0.6	-
Gas Water & Multiutilities index	5810.39	-0.6	-2.4
Oil & Gas Producers	8252.67	-0.4	44.4

Based on last week's performance. †Price at suspension.

CURRENCIES

Dec 2	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
Argentina	Argentine Peso	168.1071	0.4211	176.0671	0.2237	205.3593	-0.3399
Australia	Australian Dollar	1.4765	0.0081	1.5464	0.0066	1.8036	0.0025
Bahrain	Bahrainin Dinar	0.3770	-	0.3949	-0.0005	0.4605	-0.0019
Bolivia	Bolivian Boliviano	6.9100	-	7.2372	-0.0090	8.4412	-0.0352
Brazil	Brazilian Real	5.2338	0.0475	5.4816	0.0430	6.3936	0.0316
Canada	Canadian Dollar	1.3479	0.0050	1.4117	0.0034	1.6466	-0.0008
Chile	Chilean Peso	882.4500	3.1500	924.2347	2.1596	1077.9991	-0.6320
China	Chinese Yuan	7.0384	-0.0408	7.3717	-0.0520	8.5982	-0.0860
Colombia	Colombian Peso	4766.2400	-15.3100	4991.9256	-22.2319	5822.4299	-43.0650
Costa Rica	Costa Rican Colon	603.5950	2.9950	632.1757	2.3584	737.3504	0.5987
Czech Republic	Czech Koruna	23.2835	0.0346	24.3860	0.0061	28.4431	-0.0762
Denmark	Danish Krone	7.1011	0.0091	7.4373	0.0003	8.6746	-0.0250
Egypt	Egyptian Pound	24.5584	0.0287	25.7213	-0.0017	30.0005	-0.0899
Hong Kong	Hong Kong Dollar	7.7837	0.0047	8.1522	-0.0052	9.5085	-0.0340
Hungary	Hungarian Forint	391.2255	-1.0885	409.7503	-1.6484	477.9203	-3.3285
India	Indian Rupee	81.3188	0.0944	85.1693	-0.0064	99.3388	-0.2986
Indonesia	Indonesian Rupiah	15427.5000	-135.0000	16158.0124	-161.5640	18846.2336	-244.1844
Israel	Israeli Shekel	3.4080	0.0158	3.5693	0.0122	4.1631	0.0021
Japan	Japanese Yen	135.4750	-0.4550	141.8898	-0.6527	165.4960	-1.2484
..One Month		135.4744	-0.4562	141.8896	-0.6531	165.4955	-1.2494
..Three Month		135.4734	-0.4583	141.8891	-0.6542	165.4944	-1.2516
..One Year		135.4681	-0.4686	141.8860	-0.6603	165.4955	-1.2562
Kenya	Kenyan Shilling	122.4500	-0.1000	128.2481	-0.2636	149.5847	-0.7466
Kuwait	Kuwaiti Dinar	0.3070	-0.0001	0.3215	-0.0005	0.3750	-0.0016
Malaysia	Malaysian Ringgit	4.3880	-0.0170	4.5958	-0.0235	5.3604	-0.0432
Mexico	Mexican Peso	19.3685	0.2225	20.2856	0.2082	23.6605	0.1743
New Zealand	New Zealand Dollar	1.5694	0.0011	1.6437	-0.0009	1.9171	-0.0066
Nigeria	Nigerian Naira	443.7500	-0.2500	464.7619	-0.8373	542.0841	-2.5676
Norway	Norwegian Krone	9.8374	0.0885	10.3033	0.0801	12.0174	0.0584
Pakistan	Pakistani Rupee	223.7500	-0.2000	234.3447	-0.4997	273.3325	-1.3853
Peru	Peruvian Nuevo Sol	3.8349	0.0074	4.0165	0.0028	4.6847	-0.0105
Philippines	Philippine Peso	55.7300	-0.4650	58.3689	-0.5598	68.0796	-0.8544
Poland	Polish Zloty	4.4701	0.0049	4.6818	-0.0007	5.4607	-0.0168
Romania	Romanian Leu	4.7006	-0.0019	4.9232	-0.0080	5.7422	-0.0262
Russia	Russian Ruble	62.6250	0.9750	65.5903	0.9413	76.5026	0.8770
Saudi Arabia	Saudi Riyal	3.7590	-0.0005	3.9370	-0.0054	4.5920	-0.0198
Singapore	Singapore Dollar	1.3554	-0.0003	1.4195	-0.0020	1.6557	-0.0072
South Africa	South African Rand	17.5244	-0.0769	18.3542	-0.1034	21.4078	-0.1836
South Korea	South Korean Won	1300.0000	0.1500	1361.5560	-1.5274	1588.0772	-6.4397
Sweden	Swedish Krona	10.4042	0.0478	10.8968	0.0366	12.7097	0.0056
Switzerland	Swiss Franc	0.9411	0.0020	0.9857	0.0008	1.1496	-0.0024
Taiwan	New Taiwan Dollar	30.5970	-0.0290	32.0458	-0.0701	37.3772	-0.1915
Thailand	Thai Baht	34.7650	-0.2050	36.4111	-0.2600	42.4688	-0.4286
Tunisia	Tunisian Dinar	3.2089	0.0047	3.3608	0.0008	3.9199	-0.0106
Turkey	Turkish Lira	18.6380	0.0035	19.5205	-0.0205	22.7681	-0.0907
United Arab Emirates	UAE Dirham	3.6730	0.0000	3.8469	-0.0048	4.4869	-0.0188
United Kingdom	Pound Sterling	0.8186	0.0034	0.8574	0.0025	-	-
..One Month		0.8188	0.0034	0.8572	0.0025	-	-
..Three Month		0.8189	0.0034	0.8570	0.0025	-	-
..One Year		0.8194	0.0034	0.8558	0.0025	-	-
United States	United States Dollar	-	-	1.0474	-0.0013	1.2216	-0.0051
..One Month		-	-	1.0471	-0.1793	1.2218	-0.0051
..Three Month		-	-	1.0466	-0.1793	1.2219	-0.0051
..One Year		-	-	1.0447	-0.1794	1.2224	-0.0051
Vietnam	Vietnamese Dong	24370.0000	-140.0000	25523.9427	-178.4391	29770.4106	-295.9157
European Union	Euro	0.9548	0.0012	-	-	1.1664	-0.0034
..One Month		0.9545	0.0012	-	-	1.1662	-0.0034
..Three Month		0.9541	0.0012	-	-	1.1660	-0.0034
..One Year		0.9522	0.0011	-	-	1.1648	-0.0034

Rates are derived from WM Reuters Spot Rates and MorningStar (latest rates at time of production). Some values are rounded. Currency redenominated by 1000. The exchange rates printed in this table are also available at www.FT.com/marketsdata

FTSE ACTUARIES SHARE INDICES

UK SERIES www.ft.com/equities

Produced in conjunction with the Institute and Faculty of Actuaries

	£ Strlg Dec 02	Day's chge%	Euro Index	£ Strlg Dec 01	£ Strlg Nov 30	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
FTSE 100 (100)	7556.23	-0.03	6877.08	7558.49	7573.05	7129.21	3.60	1.62	17.09	265.96	7757.50
FTSE 250 (250)	19363.28	-0.24	17622.93	19409.42	19163.33	22684.84	3.10	0.74	43.31	528.99	16101.91
FTSE 250 ex Inv Co (173)	19908.32	0.13	18118.98	19883.39	19651.36	23464.14	3.20	1.28	24.48	559.37	16891.10
FTSE 350 (350)	4179.26	-0.06	3803.64	4181.79	4180.85	4083.04	3.53	1.51	18.76	142.20	8513.64
FTSE 350 ex Investment Trusts (270)	4117.79	-0.01	3747.69	4118.08	4120.64	3975.30	3.59	1.68	16.63	142.45	4335.29
FTSE 350 Higher Yield (132)	3574.46	-0.17	3253.19	3580.59	3599.88	3220.26	4.99	1.74	11.54	163.64	8215.69
FTSE 350 Lower Yield (218)	4363.83	0.05	3971.61	4361.49	4335.27	4706.50	2.03	0.94	52.68	91.51	5372.61
FTSE SmallCap (236)	6267.83	0.21	5704.49	6254.95	6226.46	7244.95	3.40	0.07	403.49	202.11	10539.20
FTSE SmallCap ex Inv Co (126)	5021.54	0.28	4570.21	5007.28	4979.87	6015.02	3.56	2.37	11.86	155.17	8776.57
FTSE All-Share (586)	4138.81	-0.05	3766.81	4141.04	4139.65	4063.89	3.53	1.47	19.23	140.60	8513.90
FTSE All-Share ex Inv Co (396)	4042.81	0.00	3679.44	4042.93	4045.11	3916.17	3.58	1.69	16.54	139.65	4321.49
FTSE All-Share ex Multinationals (523)	1089.75	-0.03	821.92	1090.11	1082.15	1305.37	3.89	0.89	28.88	39.94	2320.98
FTSE Fledgling (81)	11601.79	0.12	10559.03	11588.23	11576.01	13093.55	3.78	4.36	6.07	357.38	25139.61
FTSE Fledgling ex Inv Co (31)	15111.23	0.39	13753.05	15053.20	15161.40	17306.16	3.55	7.64	3.69	448.06	31769.21
FTSE All-Small (317)	4369.54	0.20	3976.81	4360.77	4341.74	5044.26	3.42	0.33	88.57	140.60	9423.84
FTSE All-Small ex Inv Co (157)	3777.52	0.29	3438.00	3766.66	3747.74	4517.44	3.56	2.55	10.99	116.58	8361.50
FTSE AIM All-Share (756)	853.32	0.32	776.63	850.56	848.59	1188.74	1.62	1.74	35.48	13.06	1002.89
FTSE All-Share Technology (21)	2031.35	-0.50	1713.98	2041.56	2006.74	2297.61	1.89	0.89	59.44	39.63	2942.35
FTSE All-Share Telecommunications (6)	1505.14	-0.55	1269.98	1513.40	1517.65	1827.22	7.05	1.03	13.81	99.22	2301.46
FTSE All-Share Health Care (14)	14489.40	0.03	12225.64	14484.59	14403.78	12562.75	2.59	1.05	36.77	374.42	13419.99
FTSE All-Share Financials (254)	4571.89	-0.06	3857.60	4574.77	4576.53	4781.95	3.69	1.03	26.28	164.19	5086.15
FTSE All-Share Real Estate (55)	845.06	1.03	745.92	836.43	828.82	1204.74	4.15	3.68	6.55	32.85	890.43
FTSE All-Share Consumer Discretionary (84)	4641.90	0.25	3916.67	4630.30	4618.52	5228.62	2.35	1.18	36.15	107.00	4923.18
FTSE All-Share Consumer Staples (24)	19982.86	0.21	16860.83	19941.85	19800.76	18984.83	3.82	1.13	23.10	692.67	18323.36
FTSE All-Share Industrials (83)	6374.98	0.16	5378.99	6364.95	6315.73	7178.51	2.26	1.30	34.24	135.51	7380.10
FTSE All-Share Basic Materials (22)	9292.32	0.12	7840.53	9281.23	9359.89	7896.26	5.85	2.00	8.55	537.40	12665.69
FTSE All-Share Energy (13)	8534.07	-1.11	7200.75	8629.43	8819.20	5987.50	3.52	2.74	10.35	302.44	10383.51
FTSE All-Share Utilities (10)	8651.73	-0.38	7300.03	8684.66	8578.30	8268.46	4.44	0.57	39.33	373.12	13191.73
FTSE All-Share Software and Computer Services (18)	2189.86	-0.47	1847.73	2200.16	2163.25	2466.75	1.89	0.88	59.91	43.04	3356.15
FTSE All-Share Technology Hardware and Equipment (3)	5269.55	-1.30	4446.26	5338.78	5210.63	6710.53	1.68	1.19	49.73	78.21	6810.46
FTSE All-Share Telecommunications Equipment (1)	613.84	-3.31	517.93	634.85	628.14	634.74	2.00	2.31	21.63	11.51	877.42
FTSE All-Share Telecommunications Service Providers (5)	2307.71	-0.41	1947.16	2317.24	2325.26	2818.58	7.29	1.01	13.58	157.08	3216.13
FTSE All-Share Health Care Providers (3)	11084.41	-0.53	9352.64	11143.00	11035.79	8122.76	0.53	4.88	38.95	58.27	10288.12
FTSE All-Share Medical Equipment and Services (2)	5509.14	0.78	4648.41	5466.63	5479.84	5782.95	2.59	0.97	39.98	142.76	5321.62
FTSE All-Share Pharmaceuticals and Biotechnology (9)	20723.53	0.00	17485.78	20723.58	20600.06	17797.53	2.62	1.04	36.59	539.80	17283.22
FTSE All-Share Banks (12)	3179.28	0.33	2682.56	3168.93	3242.11	2923.31	4.09	2.61	9.37	128.47	2813.52
FTSE All-Share Finance and Credit Services (8)	11235.02	0.02	9479.71	11232.80	11206.93	9468.59	1.86	2.05	26.25	208.86	15095.88
FTSE All-Share Investment Banking and Brokerage Services (31)	8674.35	0.11	7319.11	8664.68	8576.78	10238.81	5.15	1.51	12.88	424.98	12235.52
FTSE All-Share Closed End Investments (190)	11812.75	-0.81	9967.18	11908.70	11750.76	14055.56	2.66	-2.79	-13.52	296.90	7399.69
FTSE All-Share Life Insurance (6)	6902.19	0.65	5823.83	6857.32	6710.17	7588.91	4.44	1.08	20.84	294.59	8446.54
FTSE All-Share Nonlife Insurance (7)	3590.33	-1.08	3029.40	3629.65	3577.50	3555.47	3.99	1.24	20.23	130.27	7646.12
FTSE All-Share Real Estate Investment and Services (16)	2159.96	0.21	1822.50	2155.35	2136.55	3010.67	2.33	4.11	10.43	41.03	6440.62
FTSE All-Share Real Estate Investment Trusts (45)	2095.96	1.18	1768.50	2071.43	2052.45	2994.06	4.48	3.64	6.13	89.90	3184.30
FTSE All-Share Automobiles and Parts (2)	1383.91	1.65	1167.69	1361.51	1319.82	3570.32	0.70	-53.35	-2.66	14.02	1439.73
FTSE All-Share Consumer Services (2)	3087.38	0.46	2605.02	3073.39	3082.44	2511.61	1.24	2.58	31.27	38.43	3916.33
FTSE All-Share Household Goods and Home Construction (12)	8528.22	0.08	7195.81	8521.76	8437.99	14185.39	8.79	1.59	7.15	710.24	7674.10
FTSE All-Share Leisure Goods (2)	20023.54	-0.23	16895.15	20069.20	19947.19	24035.15	3.38	1.59	18.60	831.45	22377.90
FTSE All-Share Personal Goods (4)	29055.56	-0.04	24516.06	29066.19	29147.14	30221.58	1.78	2.94	19.12	402.68	22725.96
FTSE All-Share Media (11)	9572.96	0.30	8077.33	9543.98	9510.33	9648.93	2.32	1.47	29.46	221.42	6735.56
FTSE All-Share Retailers (22)	1943.15	0.68	1639.56	1930.03	1913.93	2742.02	2.82	3.32	10.68	54.10	2535.60
FTSE All-Share Travel and Leisure (29)	6460.43	-0.02	5451.08	6461.89	6467.14	6988.77	0.63	-8.42	-18.78	40.81	6681.99
FTSE All-Share Beverages (5)	29416.73	0.06	24820.80	29398.97	29108.29	29707.46	2.04	2.00	24.52	584.47	23575.08
FTSE All-Share Food Producers (10)	6068.18	2.71	5120.11	5908.01	5889.94	6679.06	2.28	2.55	17.26	98.17	5856.97
FTSE All-Share Tobacco (2)	36836.04	0.34	31080.95	36711.97	36780.78	27452.37	6.44	0.87	17.88	1906.82	34597.09
FTSE All-Share Construction and Materials (15)	7279.82	0.05	6142.45	7275.84	7276.77	8520.98	3.17	0.64	48.93	230.56	8882.84
FTSE All-Share Aerospace and Defense (7)	5163.78	0.51	4357.01	5137.47	5206.66	4417.53	2.28	0.11	398.16	104.10	6298.22
FTSE All-Share Electronic and Electrical Equipment (10)	10955.40	0.75	9243.78	10873.88	10640.45	13696.66	1.60	2.11	29.55	160.27	10834.18
FTSE All-Share General Industrials (8)	5012.83	0.35	4229.65	4995.32	4995.91	5455.42	2.85	1.16	30.18	142.00	6621.14
FTSE All-Share Industrial Engineering (5)	16287.08	0.19	13742.46	16255.77	16071.50	19726.11	1.61	2.01	31.01	261.52	21877.95
FTSE All-Share Industrial Support Services (30)	10083.55	0.22	8508.14	10061.11	9894.08	11897.26	1.90	1.67	31.47	194.51	11611.50
FTSE All-Share Industrial Transportation (8)	5522.84	-1.21	4659.98	5590.73	5480.37	6980.38	2.11	2.79	16.94	99.15	5787.55
FTSE All-Share Industrial Materials (1)	15427.88	-1.28	494.54	15627.92	15252.85	21103.94	2.13	1.81	25.93	329.06	19487.71
FTSE All-Share Industrial Metals and Mining (8)	8375.14	0.06	7066.65	8370.22	8463.06	6529.14	6.24	2.01	7.97	517.75	12856.35
FTSE All-Share Precious Metals and Mining (5)	10444.64	-0.30	8812.82	10476.56	10334.94	19157.66	3.43	1.83	15.98	358.99	7363.83
FTSE All-Share Chemicals (7)	13467.30	0.95	11363.23	13340.30	13191.48	18132.91	2.64	1.79	21.12	324.25	13497.54
FTSE All-Share Oil. Gas and Coal (12)	8284.71	-1.10	6990.35	8377.25	8561.42	5810.81	3.52	2.74	10.35	293.60	10453.95
FTSE Sector Indices											
Non Financials (332)	**5071.32**	**-0.05**	**4615.51**	**5073.92**	**5071.20**	**4888.54**	**3.48**	**1.61**	**17.87**	**169.57**	**9179.26**

Hourly movements	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	High/day	Low/day
FTSE 100	7532.78	7525.69	7538.10	7544.94	7544.65	7544.45	7536.95	7566.66	7560.96	7570.35	7508.27
FTSE 250	19412.69	19468.55	19465.84	19492.49	19518.44	19494.76	19421.92	19437.93	19390.65	19536.08	19259.83
FTSE SmallCap	6253.36	6257.99	6263.91	6266.54	6271.98	6270.40	6258.69	6268.18	6269.56	6274.77	6248.06
FTSE All-Share	4129.40	4127.96	4133.63	4137.60	4138.36	4137.51	4131.67	4145.85	4141.83	4147.58	4116.08

Time of FTSE 100 Day's high:15:01:45 Day's Low13:33:30 FTSE 100 2010/11 High: 7672.40(10/02/2022) Low: 6826.15(12/10/2022)
Time of FTSE All-Share Day's high:15:02:00 Day's Low13:33:00 FTSE 100 2010/11 High: 4296.96(10/02/2022) Low: 3712.50(12/10/2022)

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FT 30 INDEX

	Dec 02	Dec 01	Nov 30	Nov 29	Nov 28	Yr Ago	High	Low
FT 30	2532.00	2523.10	2514.90	2507.60	2515.20	0.00	2880.10	2152.10
FT 30 Div Yield	-	-	-	-	-	0.00	3.93	2.74
P/E Ratio net	-	-	-	-	-	0.00	19.44	14.26

FT 30 hourly changes

8	9	10	11	12	13	14	15	16	High	Low
2523.1	2531.5	2533.5	2538.5	2542.5	2540.3	2531.9	2536.2	2531.2	2542.8	2513.2

FT30 constituents and recent additions/deletions can be found at www.ft.com/ft30

FT WILSHIRE 5000 INDEX SERIES

	Dec 01		Dec 01
FT Wilshire 5000	41355.71	FT Wilshire Mid Cap	5627.56
FT Wilshire 2500	5296.26	FT Wilshire Small Cap	5056.27
FT Wilshire Mega Cap	5266.89	FT Wilshire Micro Cap	4879.69
FT Wilshire Large Cap	5326.93		

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FTSE SECTORS: LEADERS & LAGGARDS

Year to date percentage changes

Oil & Gas Producers	44.63	Gas Water & Multi	-2.42	FTSE 250 Index	-17.54
Oil & Gas	43.89	Health Care Eq & Srv	-3.18	Mobile Telecomms	-18.84
Tobacco	25.77	Beverages	-5.76	Construct & Material	-19.30
Mining	21.64	Travel & Leisure	-6.79	Telecommunications	-19.70
Aerospace & Defense	16.90	Media	-6.92	Industrial Eng	-19.85
Basic Materials	13.18	Software & Comp Serv	-7.93	Oil Equipment & Serv	-20.82
Pharmace & Biotech	10.78	Technology	-8.15	Leisure Goods	-21.14
Health Care	9.83	Nonlife Insurance	-8.96	Fixed Line Telecomms	-22.16
Banks	5.63	Tech Hardware & Eq	-10.08	Household Goods & Ho	-23.97
Electricity	4.61	Financial Services	-10.30	Electronic & Elec Eq	-25.67
Personal Goods	4.48	Financials	-10.62	Chemicals	-26.91
FTSE 100 Index	2.33	Life Insurance	-11.28	General Retailers	-29.95
Beverages	31.66	Food Producers	-12.23	Food & Drug Retailer	-29.99
NON FINANCIALS Index	-0.01	Industrials	-13.91	Real Est Invest & Se	-31.68
Utilities	-0.66	Consumer Services	-14.54	Real Est Invest & Tr	-32.22
Consumer Goods	-1.05	FTSE SmallCap Index	-15.97	Industrial Transport	-39.38
FTSE All{HY-}Share Index	-1.64	Support Services	-16.96	Automobiles & Parts	-62.05
		Equity Invest Instr	-17.15	Industrial Metals &	-78.61

FTSE GLOBAL EQUITY INDEX SERIES

Dec 2 Regions & countries	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
FTSE Global All Cap	9513	713.24	0.8	8.1	-15.8	1143.44	-14.0	2.3
FTSE Global All Cap	9513	713.24	0.8	8.1	-15.8	1143.44	-14.0	2.3
FTSE Global Large Cap	1906	637.86	0.7	8.3	-16.0	1054.11	-14.2	2.3
FTSE Global Mid Cap	2260	922.95	1.0	7.9	-14.0	1391.87	-12.2	2.2
FTSE Global Small Cap	5347	947.70	0.8	6.3	-17.2	1366.32	-15.6	2.1
FTSE All-World	4166	419.21	0.8	8.3	-15.6	711.75	-13.8	2.3
FTSE World	2662	761.35	0.8	8.0	-15.2	1734.66	-13.4	2.3
FTSE Global All Cap ex UNITED KINGDOM In	9223	752.90	0.7	7.9	-16.0	1183.82	-14.3	2.2
FTSE Global All Cap ex USA	7703	502.37	2.0	12.3	-16.3	893.61	-13.7	3.2
FTSE Global All Cap ex JAPAN	8108	744.56	0.7	7.8	-15.8	1204.23	-14.0	2.2
FTSE Global All Cap ex Eurozone	8851	755.38	0.6	7.5	-15.6	1184.62	-13.9	2.2
FTSE Developed	2178	699.07	0.8	7.9	-15.3	1128.23	-13.6	2.1
FTSE Developed All Cap	5827	728.42	0.8	7.7	-15.4	1158.22	-13.8	2.1
FTSE Developed Large Cap	834	655.00	0.7	7.9	-15.5	1075.97	-13.8	2.1
FTSE Developed Europe Large Cap	219	388.95	2.6	13.7	-13.5	771.06	-10.7	3.1
FTSE Developed Europe Mid Cap	354	580.34	3.3	14.2	-24.7	998.57	-22.6	3.0
FTSE Dev Europe Small Cap	746	818.19	3.5	13.5	-25.9	1351.86	-23.8	3.1
FTSE North America Large Cap	234	874.32	-0.1	5.6	-16.2	1314.22	-14.9	1.7
FTSE North America Mid Cap	422	1156.89	0.4	6.0	-11.5	1607.90	-10.0	1.8
FTSE North America Small Cap	1334	1131.36	0.1	3.9	-14.2	1507.31	-13.0	1.6
FTSE North America	656	573.88	0.0	5.7	-15.3	881.90	-14.0	1.7
FTSE Developed ex North America	1522	267.36	2.6	13.2	-15.2	512.13	-12.6	3.1
FTSE Japan Large Cap	169	381.12	2.8	11.8	-16.4	560.30	-14.3	2.5
FTSE Japan Mid Cap	340	531.84	2.2	10.7	-13.4	742.63	-11.1	2.6
FTSE Global wi JAPAN Small Cap	896	592.15	2.2	11.0	-14.9	858.65	-12.5	2.7
FTSE Japan	509	156.61	2.7	11.6	-15.8	257.81	-13.7	2.5
FTSE Asia Pacific Large Cap ex Japan	1088	685.73	1.5	15.8	-17.7	1250.51	-15.3	3.1
FTSE Asia Pacific Mid Cap ex Japan	866	976.60	1.4	13.3	-13.8	1716.78	-11.2	3.4
FTSE Asia Pacific Small Cap ex Japan	2114	550.61	1.8	12.4	-24.4	940.11	-22.3	3.1
FTSE Asia Pacific Ex Japan	1954	546.21	1.5	15.5	-17.4	1058.59	-14.9	3.2
FTSE Emerging All Cap	3686	715.37	0.6	11.5	-18.8	1248.31	-16.0	3.7
FTSE Emerging Large Cap	1072	660.31	0.6	12.4	-19.8	1158.94	-17.0	3.8
FTSE Emerging Mid Cap	916	1032.52	-0.1	7.7	-10.2	1812.13	-7.0	3.9
FTSE Emerging Small Cap	1698	771.33	1.0	9.2	-20.4	1287.23	-17.8	3.4
FTSE Emerging Europe	111	121.76	1.6	17.8	-70.6	255.17	-69.3	2.9
FTSE Latin America All Cap	262	729.60	0.2	-4.3	2.9	1445.18	11.8	11.6
FTSE Middle East and Africa All Cap	329	747.56	-1.5	0.8	-6.2	1369.98	-3.3	3.2
FTSE Global wi UNITED KINGDOM All Cap In	290	325.14	3.0	12.8	-9.6	665.45	-6.4	3.6
FTSE Global wi USA All Cap	1810	985.15	0.0	5.4	-15.5	1427.35	-14.2	1.6
FTSE Europe All Cap	1459	439.93	2.8	13.8	-17.8	837.23	-15.3	3.1
FTSE Eurozone All Cap	662	424.13	2.6	14.8	-18.2	801.02	-15.7	3.1
FTSE EDHEC-Risk Efficient All-World	4166	480.13	0.8	7.8	-12.1	756.56	-10.0	2.6
FTSE EDHEC-Risk Efficient Developed Europe	573	320.44	3.0	14.0	-22.4	563.87	-20.1	3.2
Oil & Gas	130	423.17	-0.1	2.0	29.1	869.08	35.4	4.5
Oil & Gas Producers	86	421.27	-0.2	1.1	32.6	889.07	39.6	4.8

Dec 2 Sectors	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
Oil Equipment & Services	24	289.05	0.4	4.2	23.5	535.68	28.4	4.1
Basic Materials	393	622.03	1.6	14.4	-7.5	1146.43	-3.5	4.7
Chemicals	196	820.57	0.9	10.1	-15.3	1452.61	-12.9	3.0
Forestry & Paper	20	261.33	2.1	8.6	-14.4	527.65	-11.6	3.8
Industrial Metals & Mining	98	512.15	1.5	17.0	-7.4	981.96	-2.4	7.3
Mining	79	1003.06	2.7	20.5	7.8	1957.26	14.5	5.8
Industrials	802	509.16	1.4	9.6	-15.2	812.74	-13.5	2.0
Construction & Materials	154	582.97	2.2	11.6	-21.1	982.01	-19.4	2.2
Aerospace & Defense	35	891.83	0.3	4.5	11.0	1393.43	12.8	1.5
General Industrials	76	244.05	0.7	10.6	-12.0	431.71	-9.8	2.5
Electronic & Electrical Equipment	157	643.76	2.2	11.0	-19.9	925.39	-18.7	1.5
Industrial Engineering	158	1016.23	1.7	11.4	-12.1	1616.01	-10.4	1.9
Industrial Transportation	132	950.66	0.6	11.9	-14.4	1547.67	-11.7	3.4
Support Services	90	542.15	1.6	6.9	-23.7	806.99	-22.6	1.5
Consumer Goods	568	568.85	1.3	7.8	-17.5	957.29	-15.7	2.3
Automobiles & Parts	132	525.01	0.9	0.5	-32.1	849.43	-31.0	2.0
Beverages	72	791.60	1.3	8.5	-1.8	1347.86	0.4	2.2
Food Producers	134	736.38	1.0	7.0	-6.2	1270.39	-4.1	2.4
Household Goods & Home Construction	65	539.51	1.1	11.8	-17.5	910.04	-15.3	2.7
Leisure Goods	53	240.83	2.0	9.5	-24.4	340.70	-23.4	1.4
Personal Goods	98	930.07	1.4	16.3	-19.4	1433.09	-18.0	1.9
Tobacco	14	1025.91	2.2	7.7	6.7	2904.87	11.7	6.0
Health Care	343	741.87	1.0	6.5	-6.0	1182.67	-4.5	1.7
Health Care Equipment & Services	133	1407.13	0.5	4.6	-15.4	1725.63	-14.7	1.0
Pharmaceuticals & Biotechnology	210	503.49	1.3	7.8	1.3	863.33	3.6	2.1
Consumer Services	427	543.95	0.2	7.2	-22.8	777.03	-21.9	1.2
Food & Drug Retailers	69	328.43	0.5	7.8	-4.6	522.55	-2.4	2.3
General Retailers	141	947.24	-0.3	6.8	-25.9	1294.96	-25.3	1.0
Media	75	311.98	1.2	6.4	-33.5	448.50	-32.8	1.3
Travel & Leisure	142	461.89	0.8	8.6	-10.0	674.87	-8.9	1.1
Telecommunication	89	132.57	0.8	3.6	-10.6	312.60	-7.1	4.2
Fixed Line Telecommuniations	31	103.67	0.9	3.8	-8.0	280.50	-3.7	5.1
Mobile Telecommunications	58	156.59	0.8	3.5	-11.9	318.32	-8.8	3.8
Utilities	200	324.60	0.8	7.9	-5.4	760.07	-2.5	3.3
Electricity	142	367.44	0.7	6.4	-4.7	846.90	-1.9	3.2
Gas Water & Multiutilities	58	320.27	1.0	11.5	-7.1	777.06	-3.9	3.6
Financials	854	266.98	0.3	8.2	-11.0	513.51	-8.4	3.1
Banks	270	202.76	-0.2	6.4	-10.4	434.93	-6.9	4.1
Nonlife Insurance	72	366.83	0.6	8.7	4.7	612.43	7.7	2.8
Life Insurance	51	224.99	1.3	14.1	-6.9	434.30	-3.2	3.9
Financial Services	211	445.32	0.5	8.6	-10.8	676.49	-9.3	1.7
Technology	360	482.69	0.9	10.4	-28.9	630.14	-28.2	1.1
Software & Computer Services	184	724.20	0.9	10.8	-32.3	876.33	-31.9	0.7
Technology Hardware & Equipment	176	430.75	0.8	9.9	-24.8	605.12	-23.8	1.5
Alternative Energy	20	191.17	-0.2	14.4	-8.3	274.32	-7.9	0.4
Real Estate Investment & Services	142	256.67	0.5	15.2	-22.0	500.42	-19.7	3.1
Real Estate Investment Trusts	108	455.09	0.2	7.4	-23.7	1064.37	-21.5	3.7
FTSE Global Large Cap	1906	637.86	0.7	8.3	-16.0	1054.11	-14.2	2.3

The FTSE Global Equity Series, launched in 2003, contains the FTSE Global Small Cap Indices and broader FTSE Global All Cap Indices (large/mid/small cap) as well as the enhanced FTSE All-World index Series (large/mid cap) - please see https://research.ftserussell.com/Products/indices/Home/indexfiltergeis?indexName=GEISAC&currency=USD&rtn=CAP&segment=global-developed--emerging. The trade names Fundamental Index® and RAFI® are registered trademarks and the patented and patent-pending proprietary intellectual property of Research Affiliates, LLC (US Patent Nos. 7,620,577; 7,747,502; 7,778,905; 7,792,719; Patent Pending Publ. Nos. US-2006-0149645-A1, US-2007-0055598-A1, US-2008-0288416-A1, US-2010- 0063942-A1, WO 2005/076812, WO 2007/078399 A2, WO 2008/118372, EPN 1733352, and HK1099110). "EDHEC™" is a trade mark of EDHEC Business School As of January 2nd 2006, FTSE is basing its sector indices on the Industrial Classification Benchmark - please see www.ftse.com/icb. For constituent changes and other information about FTSE, please see www.ftse.com. © FTSE International Limited. 2013. All Rights reserved. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under licence.

FTSE 100 SUMMARY

FTSE 100	Closing Price	Day's Change	FTSE 100	Closing Price	Day's Change
3I Group PLC	1318	2.50	International Consolidated Airlines Group S.A.	134.12	1.16
Admiral Group PLC	2036	-23.00	Intertek Group PLC	4130	37.00
Airtel Africa PLC	121.80	-1.70	Jd Sports Fashion PLC	128.80	0.80
Anglo American PLC	3296	-5.50	Kingfisher PLC	249.40	2.90
Antofagasta PLC	1434.5	29.00	Land Securities Group PLC	621.80	8.60
Ashtead Group PLC	5012	-74.00	Legal & General Group PLC	254.90	-0.40
Associated British Foods PLC	1667.5	80.00	Lloyds Banking Group PLC	46.65	0.53
Astrazeneca PLC	11178	-22.00	London Stock Exchange Group PLC	8272	2.00
Auto Trader Group PLC	575.20	-1.60	M&G PLC	190.55	-0.65
Aveva Group PLC	3183	-3.00	Melrose Industries PLC	128.50	-2.00
Aviva PLC	444.80	-0.70	Mondi PLC	1557.5	14.50
B&M European Value Retail S.A.	417.70	2.60	National Grid PLC	1020	-5.00
Bae Systems PLC	813.20	-1.80	Natwest Group PLC	261.90	4.50
Barclays PLC	156.82	-1.46	Next PLC	5834	20.00
Barratt Developments PLC	409.40	3.90	Ocado Group PLC	670.40	5.60
Berkeley Group Holdings (The) PLC	3849	2.00	Pearson PLC	951.40	7.80
BP PLC	480.90	-8.55	Pershing Square Holdings LTD	2940	-5.00
British American Tobacco PLC	3408	17.00	Persimmon PLC	1295.5	10.50
British Land Company PLC	401.50	4.50	Phoenix Group Holdings PLC	596.80	5.80
Bt Group PLC	120.70	0.15	Prudential PLC	1030.5	14.50
Bunzl PLC	3050	4.00	Reckitt Benckiser Group PLC	6038	-
Burberry Group PLC	2164	13.00	Relx PLC	2337	3.00
Centrica PLC	95.00	-0.54	Rentokil Initial PLC	543.60	-0.60
Coca-Cola Hbc AG	2029	14.00	Rightmove PLC	563.20	1.20
Compass Group PLC	1875	8.50	Rio Tinto PLC	5584	-14.00
Convatec Group PLC	232.40	0.40	Rolls-Royce Holdings PLC	90.25	3.32
Crh PLC	3285	6.50	Rs Group PLC	953.00	6.00
Croda International PLC	6976	54.00	Sage Group PLC	801.80	-9.80
Dcc PLC	4392	-36.00	Sainsbury (J) PLC	223.90	1.90
Dechra Pharmaceuticals PLC	2790	12.00	Schroders PLC	462.60	-0.80
Diageo PLC	3847	1.00	Scottish Mortgage Investment Trust PLC	787.80	-8.60
Endeavour Mining PLC	1750	-6.00	Segro PLC	819.60	12.80
Entain PLC	1397.5	-5.50	Severn Trent PLC	2735	18.00
Experian PLC	2967	13.00	Shell PLC	2365.5	-16.50
F&C Investment Trust PLC	928.00	-	Smith & Nephew PLC	1089.5	11.00
Flutter Entertainment PLC	12030	-10.00	Smith (Ds) PLC	307.80	4.00
Frasers Group PLC	888.00	-7.50	Smiths Group PLC	1593.5	-2.00
Fresnillo PLC	895.60	-7.60	Smurfit Kappa Group PLC	3015	38.00
Glaxosmithkline PLC	1424	8.60	Spirax-Sarco Engineering PLC	11480	100.00
Glencore PLC	558.30	1.60	Sse PLC	1723	-17.00
Haleon PLC	291.45	-1.50	St. James's Place PLC	1185	17.50
Halma PLC	2249	30.00	Standard Chartered PLC	592.60	-2.20
Harbour Energy PLC	312.60	-5.80	Taylor Wimpey PLC	104.90	0.25
Hargreaves Lansdown PLC	871.80	19.20	Tesco PLC	228.50	-0.20
Homeserve PLC	1190	-	Unilever PLC	4178	-1.50
HSBC Holdings PLC	498.50	0.60	Unite Group PLC	940.50	6.50
Imperial Brands PLC	2100	-6.00	United Utilities Group PLC	1049	3.00
Informa PLC	620.60	1.20	Vodafone Group PLC	91.14	-0.38
Intercontinental Hotels Group PLC	4782	-38.00	Whitbread PLC	2609	3.00
Intermediate Capital Group PLC	1243	-25.00	Wpp PLC	877.00	3.20

UK STOCK MARKET TRADING DATA

	Dec 02	Dec 01	Nov 30	Nov 29	Nov 28	Yr Ago
Order Book Turnover (m)	384.97	1755.35	324.43	44.43	47.06	47.06
Order Book Bargains	667322.00	754356.00	685355.00	620373.00	491480.00	491480.00
Order Book Shares Traded (m)	1163.00	2431.00	1248.00	1130.00	1069.00	1069.00
Total Equity Turnover (£m)	5333.42	8071.81	7219.48	7383.66	4258.00	4258.00
Total Mkt Bargains	844813.00	955960.00	865191.00	803380.00	638327.00	638327.00
Total Shares Traded (m)	4626.00	6733.00	5322.00	6407.00	6459.00	6459.00

† Excluding intra-market and overseas turnover. *UK only total at 6pm. ‡ UK plus intra-market turnover. (u) Unavaliable. (c) Market closed.

All data provided by Morningstar unless otherwise noted. All elements listed are indicative and believed accurate at the time of publication. No offer is made by Morningstar or the FT. The FT does not warrant nor guarantee that the information is reliable or complete. The FT does not accept responsibility and will not be liable for any loss arising from the reliance on or use of the listed information.
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UK RIGHTS OFFERS

Issue price	Amount paid up	Latest renun. date	High	Low	Stock	closing Price p	+or-

There are currently no rights offers by any companies listed on the LSE.

UK COMPANY RESULTS

Company		Turnover		Pre-tax		EPS(p)		Div(p)		Pay day	Total	
Ajax Resources	Int	**0.000**	-	**0.098L**	-	**0.210L**	-	**0.00000**	-	-	**0.000**	-
Honye Financial Services Ltd	Pre	**0.000**	0.000	**0.295L**	0.813L	**1.200L**	3.300L	**0.00000**	0.00000	-	**0.000**	0.000
Marechale Capital	Int	**0.168**	0.497	**0.180L**	1.501	**1.700L**	1.700	**0.00000**	0.00000	-	**0.000**	0.000
Mind Gym	Int	**26.759**	24.142	**0.641**	0.017	**0.850**	0.010L	**0.00000**	0.00000	-	**0.000**	0.000
Premier Miton Group	Pre	**90.233**	94.726	**14.913**	17.525	**6.540**	9.530	**6.30000**	6.30000	Feb 10	**10.000**	10.000
ReNeuron Group	Int	**0.438**	0.058	**3.818L**	5.964L	**5.600L**	9.200L	**0.00000**	0.00000	-	**0.000**	0.000
Triple Point Energy Transition	Int			**6.882**	0.382	**6.880**	0.004	**1.37500**	1.37500	Jan 6	**2.750**	1.375

Figures in £m. Earnings shown basic. Figures in light text are for corresponding period year earlier.
For more information on dividend payments visit www.ft.com/marketsdata

UK RECENT EQUITY ISSUES

Issue date	Issue price(p)	Sector	Stock code	Stock	Close price(p)	+/-	High	Low	Mkt Cap (£m)
11/09	250.00		ITH	Ithaca Energy PLC	181.10	-6.70	254.90	178.00	182034.9
10/31	4.00		BWN	Bowen Fintech PLC	6.25	1.13	7.38	5.90	343.8
10/27	10.00		UMR	Unicorn Mineral Resource PLC	18.50	0.00	19.50	10.00	513.5
10/24	1.00		ATN	Eastinco Mining and Exploration PLC	0.95	-0.05	1.00	0.90	916.5

§Placing price. *Introduction. ‡When issued. Annual report/prospectus available at www.ft.com/ir
For a full explanation of all the other symbols please refer to London Share Service notes.

MARKET DATA

FT500: THE WORLD'S LARGEST COMPANIES

Stock	Price	+/-Week	52 Week High	52 Week Low	Yld	P/E	MCap m
Australia (A$)							
ANZ Bank	24.65	0.00	28.33	20.78	5.93	10.67	49939.95
BHP Group	45.76	1.21	53.72	35.83	8.70	11.10	156897.9
CmwBkAu	106.95	-1.06	109.20	86.98	3.17	20.76	122506.19
CSL	301.89	2.89	307.82	240.10	0.97	44.63	98598.83
NatAusBk	31.38	0.15	33.75	25.43	2.77	17.26	67005.12
Telstra	4.00	0.06	4.20	3.62	2.42	33.59	31303.25
Wesfarmers	48.46	-0.39	60.78	40.03	3.56	25.72	37214.87
Westpac Bank	23.76	-0.11	24.67	18.80	3.62	17.84	56342.42
Woolworths	34.45	-0.41	41.13	31.67	3.04	40.56	28384.02
Belgium (€)							
AnBshInBv	57.15	2.58	58.72	45.56	0.91	29.11	103981.46
KBC Grp	55.40	2.16	81.70	45.53	6.08	9.20	24188.93
Brazil (R$)							
Ambev	16.53	0.76	16.88	12.81	3.49	24.41	49744.22
Bradesco♦	13.57	0.39	17.72	12.69	6.25	6.14	12628.24
Cielo	4.69	-0.09	6.22	2.01	3.17	15.52	2434.54
ItauHldFin♦	22.90	0.54	26.04	18.86	3.46	8.86	21694.55
Petrobras	30.15	2.66	42.08	25.53	16.27	4.20	42873.22
Vale	87.38	6.48	107.11	61.90	15.19	3.81	79785.13
Canada (C$)							
Bausch Hlth	10.68	1.54	36.26	5.10	-	-3.33	2867.24
BCE	63.60	-0.55	74.09	55.66	5.30	22.10	43029.57
BkMontrl	134.60	2.48	154.47	113.73	3.23	10.75	67632.69
BkNvaS	69.25	-2.11	95.00	63.19	5.16	8.99	61208.34
Brookfield	61.63	-0.45	79.04	51.07	1.03	21.21	74060.45
CanadPcR	110.54	2.04	111.43	86.12	0.66	27.48	76279
CanImp	59.64	-5.46	83.75	55.35	9.69	4.29	40087.6
CanNatRs	81.11	0.59	88.18	48.42	2.37	13.05	66632.17
CanNatRy	171.91	2.74	174.48	137.26	1.38	25.92	86361.65
Enbridge	54.90	-1.04	59.69	46.88	5.86	19.88	82470.95
GtWesLif	31.84	-0.39	41.50	27.99	5.84	9.29	22007.89
ImpOil	76.18	-0.39	79.83	41.04	1.30	22.75	34184.21
Manulife	24.49	0.46	28.09	20.81	4.60	7.19	34223.79
Nutrien	107.06	-3.10	147.93	84.83	2.09	15.95	41338.03
RylBkC	134.52	-0.29	149.60	116.75	3.19	12.40	138281.58
SHOP	58.88	9.70	194.50	33.00	-	2.11	43625.01
Suncor En	43.18	-4.20	53.62	28.77	2.34	16.20	43229.58
ThmReut	159.05	3.52	159.40	119.23	1.24	11.38	56590.45
TntoDom	92.37	1.35	109.08	77.27	3.41	12.01	124836.81
TrnCan	58.25	-7.72	74.44	54.60	5.75	32.54	43987.67
China (HK$)							
AgricBkCh	2.52	0.02	3.15	2.22	8.44	3.30	9952
Bk China	2.70	0.00	3.20	2.51	8.22	3.34	29006.9
BkofComm	4.34	0.01	5.74	3.84	8.04	3.58	19521.91
BOE Tech	0.74	-0.03	0.86	0.57	-	11.92	18.91
Ch Coms Cons	3.78	0.17	5.17	3.09	5.37	3.13	2145.74
Ch Evrbrght	2.29	0.02	3.11	2.04	10.44	3.09	3730.21
Ch Rail Cons	4.60	0.21	5.95	3.75	5.69	2.44	1227.05
Ch Rail Gp	4.20	0.08	5.88	3.48	4.89	3.38	2270.27
ChConstBk	4.66	0.04	6.23	4.12	7.95	3.38	143935.45
China Vanke	15.72	1.82	21.70	9.96	9.04	7.07	3850.43
ChinaCitic	3.40	0.08	4.08	2.92	8.24	3.15	6500.68
ChinaLife	11.82	0.88	15.04	8.53	5.77	5.16	11299.95
ChinaMBank	38.50	3.05	70.80	25.40	3.70	7.09	22707.84
ChinaMob	51.35	0.15	58.65	45.90	6.26	7.91	134978.28
ChinaPcIns	17.44	1.22	25.90	12.10	7.52	5.67	6218.31
ChMinsheng	2.66	0.13	3.29	2.19	9.23	3.44	2843.38
ChMrchSecs	13.47	0.45	18.56	12.06	3.34	11.68	14204.01
Chna Utd Coms	4.74	0.94	4.85	3.30	2.43	23.10	20851.33
ChShenEgy	22.55	-0.15	27.65	16.82	9.07	6.83	9784.9
ChShpbldng	3.63	0.01	4.33	3.36	-	-262.22	11389.5
ChStConEng	5.68	0.26	6.40	4.67	3.89	4.28	32954.14
ChUncHK	4.51	0.51	4.72	3.27	3.48	9.92	17729.17
CNNC Intl	6.24	-0.02	8.92	5.78	2.06	15.85	16712.01
CSR	3.09	0.07	3.73	2.37	6.68	8.48	1735.27
Daqin	6.77	0.08	7.25	5.95	7.30	9.96	14299.92
GuosenSec	9.12	0.20	11.70	8.43	2.60	10.18	11437.65
HaitongSecs	4.77	0.31	7.34	3.77	6.02	5.17	2089.45
Hngzh HikVDT	31.95	0.75	55.55	28.10	2.58	17.06	41651.59
Hunng Pwr	3.46	-0.27	5.74	2.62	5.70	-3.88	2089.41
IM Baotou Stl	1.98	0.03	3.21	1.75	-	32.76	8911.12
In&CmBkCh	3.82	0.02	4.94	3.37	7.94	3.49	42595.91
IndstrlBk	17.41	0.79	23.22	15.01	4.59	4.64	51386.34
Kweichow	1633.88	113.89	2216.96	1359	1.22	35.76	291609.21
Midea	0.34	-0.04	0.60	0.32	-	-3.69	13.15
New Ch Life Ins	18.14	1.34	24.70	12.04	8.43	3.44	2410.02
PetroChina	3.57	0.15	4.49	3.01	6.68	7.19	9677.01
PingAnIns	46.80	4.25	69.40	31.30	5.35	7.43	44779.3
PngAnBnk	12.90	1.13	19.06	10.39	1.39	7.49	35566.29
Pwr Cons Corp	7.51	0.01	9.81	6.65	1.22	15.17	11727.83
SaicMtr	15.06	0.54	22.14	13.77	4.06	7.32	24998.87
ShenwanHong	0.09	0.00	0.18	0.05	-	2.66	101.83
ShgPdgBk	7.23	0.20	8.81	6.64	6.55	4.50	30150.85
Sinopec Corp	3.58	0.05	4.28	3.06	3.89	4.31	11709.62
Sinopec Oil	2.06	0.09	2.37	1.70	-	665.53	3971.49
Denmark (kr)							
DanskeBk	128.25	0.85	133.25	91.28	1.53	8.97	15571.67
MollerMrsk	15025	-470.00	24070	13185	2.22	2.50	17715.72
NovoB	897.00	48.00	897.80	604.40	1.02	44.17	220119.55
Finland (€)							
Nokia	4.84	0.15	5.71	4.12	-	17.04	28863.41
SampoA	48.37	0.30	48.93	35.85	3.46	10.51	27005.07
France (€)							
Airbus Grpe	110.98	-2.84	120.36	86.52	-	20.77	91616.99
AirLiquide	140.50	-1.00	153.40	114.48	1.92	26.47	77019.67
AXA	27.39	0.12	29.09	20.34	5.11	9.42	67429.41
BNP Parib	52.75	-0.58	68.07	40.67	4.97	7.76	68194.05
ChristianDior	714.00	23.00	733.50	513.00	0.96	26.61	134985.04
Cred Agr	9.53	-0.21	14.27	8.09	8.22	5.31	30365.39
Danone	51.22	0.75	58.24	46.48	3.71	17.79	36255.53
EDF	12.00	0.00	12.48	6.64	3.98	9.42	48847.37
Engie SA	14.45	0.03	14.68	9.79	3.59	10.39	36866.34
EssilorLuxottica	180.55	5.35	188.64	132.70	0.59	56.21	84607.32
Hermes Intl	1520.5	42.00	1665.5	957.60	0.29	66.64	168118.95
LOreal	360.75	10.50	433.65	300.45	1.09	44.87	202793.43
LVMH	715.30	15.10	738.50	535.00	0.96	30.57	377025.29
Orange	9.65	-0.28	11.94	8.93	6.09	3271.53	26896.15
PernodRic	190.70	3.80	214.00	166.60	1.60	29.39	51519.77
Renault	34.60	0.83	38.07	20.47	-	-26.38	10716.48
Safran	117.16	-0.06	118.26	87.85	0.36	1196.38	52425.96
Sanofi	85.77	-1.77	106.08	76.45	3.65	17.70	113860.15
Sant Gbn	45.69	0.39	64.82	35.20	2.91	11.16	24680.76
Schneider	140.48	-1.84	173.78	110.02	1.81	25.30	84025.95
SocGen	23.39	-0.91	37.68	18.34	2.32	4.03	20815.61
Total	58.89	0.45	60.44	41.26	4.49	11.55	161544.04
UnibailR	51.32	-1.43	73.09	39.68	-	-7.47	7458.34
Vinci	98.25	1.17	103.74	80.74	2.68	22.25	61534.22
Vivendi	8.95	0.24	12.16	7.59	6.56	-16.32	10393.74
Germany (€)							
Allianz	202.65	-2.70	232.50	156.22	4.64	13.07	85601.63
BASF	48.73	-0.88	69.15	37.90	6.63	8.24	46876.76
Bayer	54.84	-0.61	67.99	43.91	3.57	54.90	56427.21
BMW	85.26	1.30	97.60	67.58	2.18	4.64	53756.44
Continental	57.26	0.04	97.59	44.44	-	9.01	11994.62
Deut Bank	10.02	-0.37	14.64	7.46	-	10.07	21698.31
Deut Tlkm	19.65	-0.12	19.86	14.47	2.99	23.06	102613.09
DeutsPost	38.87	0.59	56.91	29.68	3.48	10.04	50442.75
E.ON	9.19	0.07	12.54	7.28	5.01	5.22	25434.16
Fresenius Med	31.08	1.16	63.66	26.19	4.22	9.59	9537.78
Fresenius SE	27.05	1.35	38.11	19.76	3.26	8.73	15822.83
HenkelKgaA	64.60	0.25	74.75	56.55	2.77	17.54	17577.49
Linde	320.45	-10.55	334.70	244.00	1.14	50.84	165925.41
Mercedes-Benz	64.09	1.72	77.90	50.19	2.06	6.54	71812.53
MuenchRkv	301.70	3.20	304.80	205.15	3.18	14.72	44269.26
SAP	106.46	0.44	125.26	81.35	1.70	24.37	136979.4
Siemens	134.70	2.64	154.70	93.67	2.54	20.68	119916.42
Volkswgn	183.95	0.90	282.60	158.80	2.56	6.35	56852.05
Hong Kong (HK$)							
AIA	79.65	4.70	92.50	57.25	1.51	20.30	120993.54
BOC Hold	24.45	-0.45	32.75	23.55	4.57	12.50	33211.22
Ch OSLnd&Inv	20.25	0.27	27.35	14.58	5.34	5.01	28474.32
ChngKng	46.20	-0.80	57.00	42.90	3.45	10.53	21398.68
Citic Ltd	7.54	-0.28	9.26	7.01	6.43	3.47	28179.74
Citic Secs	15.52	0.80	21.32	11.82	2.77	7.96	5224.22
CK Hutchison	44.00	0.10	60.45	38.80	4.66	5.55	21675.85
CNOOC	9.97	-0.23	12.54	7.62	4.08	8.67	57097.93
HangSeng	120.30	-3.80	169.50	110.00	4.57	19.28	29548.43
HK Exc&Clr	315.20	23.80	483.60	208.20	2.61	35.39	51341.24
MTR	37.15	-0.45	43.70	33.45	2.98	26.79	29601.38
SandsCh	21.35	3.31	24.90	12.50	-	-23.48	22199.05
SHK Props	93.70	1.85	99.55	83.10	4.76	10.66	34883.62
Tencent	296.00	15.60	488.00	198.60	0.49	11.60	364371.91
India (Rs)							
Bhartiartl	848.65	0.30	860.55	628.75	-	183.88	62152.34
HDFC Bk	1607.1	-18.05	1722.1	1271.6	-	27.65	110196.77
Hind Unilevr	2615.1	65.95	2734	1927	1.21	71.10	75559.66
HsngDevFin	2665.3	-23.75	2933.8	2026	0.85	23.02	59713.39
ICICI Bk	930.60	-8.25	958.20	642.15	0.21	29.96	79808.01
Infosys	1637.9	8.10	1923.3	1360	1.83	32.84	84758.03
ITC	337.15	-3.60	361.45	207.00	3.15	28.43	51453.56
L&T	2085.5	33.30	2110	1456.35	0.85	35.11	36039.42
OilNatGas	140.90	1.45	189.80	119.85	6.37	4.05	21797.72
RelianceIn	2722.15	143.05	2856.15	2222	0.25	31.61	226492.06
SBI NewA	607.55	-1.80	622.70	430.70	0.65	17.20	66677.74
SunPhrmInds	1040	4.90	1070.95	733.70	0.71	39.33	30685.53
Tata Cons	3439.15	59.00	3920	2950.1	1.04	33.33	154749.37
Israel (ILS)							
TevaPha	29.60	-0.09	37.23	23.83	-	25.35	9690.86
Italy (€)							
Enel	5.27	0.11	7.07	3.96	6.81	25.02	56083.47
ENI	13.89	-0.41	14.85	10.43	4.75	5.97	52460.68
Generali	17.23	0.30	21.55	13.67	8.35	9.88	28531.74
IntSPaolo	2.10	-0.06	2.92	1.58	1.71	66.35	42664.83
Unicred	12.54	-0.59	15.93	7.75	0.94	19.01	29374.33
Japan (¥)							
AstellasPh	2084.5	-65.50	2205	1739	2.34	30.29	28247.51
Bridgestne	5044	-282.00	5509	4042	3.49	11.07	26572.38
Canon	3091	-110.00	3516	2467	3.35	14.44	30431.17
CntJpRwy	16105	-355.00	17920	14660	0.86	-29.15	24488.87
Denso	7435	-313.00	9575	6549	2.00	19.67	43243.18
EastJpRwy	7706	-32.00	8280	6373	1.38	-7.46	21497.3
Fanuc	20305	-440.00	25300	18740	2.36	23.31	30262.19
FastRetail	81360	790.00	88230	54310	0.68	36.87	63702.92
Fuji Hvy Ind	2236	-90.00	2684	1664.5	2.66	24.80	12695.16
Hitachi	7150	-244.00	7463	4750	1.71	10.12	51118.58
HondaMtr	3272	-106.00	3755	3043	4.18	6.68	43749.73
JapanTob	2778	-49.50	2848	2000	5.22	13.65	41011.26
KDDI	4004	-98.00	4636	3268	3.18	12.95	68057.28
Keyence	56850	-3810.00	74710	44880	0.37	45.86	102058.36
MitsbCp	4441	-267.00	4845	3447	3.30	9.56	48323.9
MitsubEst	975.95	-26.96	1013.24	876.51	-	-	-
MitsubishiEle	1341.5	-95.50	1518	1225.5	3.16	11.57	21262.02
MitsuiFud	964.72	1.80	1007.12	684.38	-	-	-
MitUFJFin	738.70	-12.50	828.30	611.10	3.73	7.23	70138.07
Mizuho Fin	1659.5	-47.00	1727.5	1416	4.99	7.66	31104.52
Murata Mfg	7460	-273.00	9410	6604	1.71	14.46	37212.76
Nippon T&T	3723	-159.00	4128	3057	2.99	11.31	99536.86
NipponTT	3723	-159.00	4128	3057	2.99	11.31	99536.86
Nissan Mt	474.60	-27.90	643.00	436.50	-	14.55	14786.14
Nomura	492.50	-9.00	562.20	460.30	4.96	-31.97	11755.16
Nppn Stl	2180	-108.50	2318.5	1735	3.89	3.25	15292.13
Panasonic	1252	-46.50	1325	1006.5	2.12	11.95	22679.31
Seven & I	5424	-302.00	6063	4619	2.01	19.48	35490.4
ShnEtsuCh	17515	-250.00	20200	14185	1.76	15.83	53129.45
Softbank	6055	-9.00	7180	4210	0.77	4.91	77006.71
Sony	11180	-510.00	14745	9213	0.57	13.47	104070.08
SumitomoF	4593	-202.00	4816	3672	4.62	8.44	46606.06
Takeda Ph	3967	-72.00	4063	3016	4.81	13.44	46332.89
TokioMarine	2753	-157.50	2970.5	1928	8.48	4.22	41455.02
Toyota	1971	-75.50	2375.5	1805	2.75	8.39	237363.65
Mexico (Mex$)							
AmerMvl	18.54	-1.24	21.44	15.66	1.80	14.67	40622.68
FEMSA UBD	152.25	-2.09	169.96	120.63	1.36	121.76	16988.37
WalMrtMex	73.41	-0.91	82.93	64.81	0.70	35.78	66181.68
Netherlands (€)							
ASML Hld	574.70	0.60	724.50	376.10	0.57	45.30	242652.98
Heineken	91.50	2.30	100.95	77.50	1.05	16.19	55199.82
ING	11.42	-0.22	14.00	7.90	5.15	9.48	44556.56
Unilever	48.77	0.91	48.81	39.36	2.94	25.03	151010.8
Norway (Kr)							
DNB	189.95	0.70	220.50	168.05	9.22	12.06	30109.31
Equinor	366.30	-0.20	410.95	225.15	1.35	15.70	118239.46
Telenor	95.08	-5.42	148.80	88.54	9.52	15.96	13525.92
Qatar (QR)							
QatarNtBk	19.52	0.37	27.00	18.40	2.63	15.52	49507.81
Saudi Arabia (SR)							
AlRajhiBnk	80.10	-2.80	117.40	78.60	2.72	14.97	85224.08
NatnlcomBnk	50.80	-2.00	82.00	50.60	2.59	18.80	60508.71
SaudiBasic	84.00	1.10	141.40	81.10	3.51	12.04	67030.2
SaudiTelec	37.50	-1.50	48.88	37.10	9.67	7.31	49673.65
Singapore (S$)							
DBS	34.47	-0.53	37.49	29.45	3.23	14.72	65453.25
JardnMt US$	48.88	0.06	62.10	42.60	3.17	9.02	14166.6
OCBC	12.21	-0.13	13.54	11.18	3.11	12.68	40483.03
SingTel	2.69	-0.01	2.88	2.31	2.52	47.28	32762.34
UOB	30.91	0.64	33.33	25.91	2.90	14.32	38191
South Africa (R)							
Firstrand	61.24	-5.85	79.34	56.70	4.25	11.03	19602.69
MTN Grp	131.98	-3.80	211.49	115.46	-	17.91	14190.83
Naspers N	2656.79	210.91	2853.25	1392.5	0.22	14.22	66025.74
South Korea (KRW)							
HyundMobis	213500	4500	265500	189500	1.85	8.44	15484.51
KoreaElePwr	19900	50.00	25100	16500	6.08	-11.78	9826.99
SK Hynix	81900	-5000.00	134000	80400	1.85	5.94	45864.15
SmsungEl	60400	-1000.00	80800	51800	2.36	10.60	277365.29
Spain (€)							
BBVA	5.61	-0.03	6.12	3.97	6.48	7.80	35443.4
BcoSantdr	2.81	-0.02	3.48	2.32	2.66	5.75	49470.76
CaixaBnk	3.42	-0.16	3.64	2.22	0.77	22.97	28881.22
Iberdrola	10.85	0.03	11.49	8.47	3.81	19.00	72297.31
Inditex	25.29	0.33	29.89	18.55	0.86	27.24	82552.32
Repsol	14.62	-0.05	16.23	9.63	4.02	9.10	22239.48
Telefonica	3.58	-0.07	5.06	3.24	9.46	2.67	21654.37
Sweden (SKr)							
AtlasCpcoB	118.84	0.44	133.60	22.08	6.37	7.72	17828.9
Ericsson	68.31	2.72	117.32	58.81	3.41	9.80	20172.28
H & M	120.70	1.40	191.86	98.25	5.40	16.19	16945.46
Investor	193.20	-2.04	228.75	158.22	1.88	8.09	33832.47
Nordea Bk	109.50	0.04	113.78	85.25	13.83	12.43	38819.8
SEB	120.05	0.65	136.15	91.64	8.71	9.76	24860.84
SvnskaHn	104.70	0.40	107.45	80.88	4.95	10.00	19570.86
Swedbank	168.85	1.20	189.60	124.50	8.93	8.78	18371.43
Telia Co	28.86	-0.59	41.70	27.93	7.18	9.91	11344.19
Volvo	193.50	-1.76	218.65	148.24	3.48	12.27	29542.81
Switzerland (SFr)							
ABB	29.63	-0.28	33.86	23.84	2.62	14.50	61858.88
CredSuisse	2.95	-0.37	9.26	2.65	3.16	-4.73	8309.11
Nestle	113.00	0.00	128.90	103.42	2.27	20.02	330198.72
Novartis	84.14	1.11	88.42	73.10	3.34	9.33	214907.13
Richemont	122.75	7.95	146.10	90.28	1.49	29.86	68085.75
Roche	308.25	-3.15	404.20	298.60	2.66	21.07	230118.96
Swiss Re	84.66	2.08	102.20	68.18	6.51	20.87	28561.6
Swisscom	511.80	6.20	587.40	443.40	4.00	15.53	28171.54
UBS	17.30	-0.18	19.90	13.10	1.87	9.09	64792.46
Zurich Fin	450.00	-0.90	461.70	376.20	4.15	15.30	71944.61
Taiwan (NT$)							
Chunghwa Telecom	112.00	2.00	132.50	105.50	3.81	24.47	28396.06
Formosa PetChem	83.50	-1.90	103.50	75.20	0.70	16.14	25996.63
HonHaiPrc	105.50	4.50	116.00	99.50	3.78	10.67	47800.29
MediaTek	739.00	11.00	1200	533.00	4.99	10.55	38630.66
TaiwanSem	492.50	-3.50	650.00	370.00	2.16	19.67	417384.47
Thailand (THB)							
PTT Explor	33.00	-0.75	41.25	32.75	5.75	9.28	27112.85
United Arab Emirates (Dhs)							
Emirtestele	24.30	-	38.98	11.60	2.75	27.17	57535.64
United Kingdom (p)							
Anglo American	3296	92.00	4292.5	2487.5	5.41	6.53	53856.06
AscBrFd	1667.5	78.00	2063	1223	0.37	27.56	16095.65
AstraZen	11178	224.00	11540	8090.32	1.85	1892.65	211588.4
Aviva	444.80	-11.80	606.58	341.92	4.80	58.53	15231.75
Barclays	156.82	-2.24	209.45	132.06	1.91	3.81	30398.1
BP	480.90	-7.45	503.30	319.95	3.27	17.45	106761.12
BrAmTob	3408	52.50	3645	2539	6.33	11.53	93189.84
BT	120.70	-6.20	201.40	113.80	-	11.72	14642.25
Compass	1875	34.00	1970.5	1471	0.75	45.62	40248.93
Diageo	3847	84.50	4097	3282.5	1.89	29.59	106831.73
GlaxoSmh	1424	31.60	2753.96	1280.92	5.62	16.44	70754.64
Glencore	558.30	24.50	567.60	346.40	1.59	20.44	87810.93
HSBC	498.50	6.55	567.20	424.20	3.24	10.89	121600.55
Imperial Brands	2100	-26.00	2185	1434.23	6.58	7.02	24162.3
Jardine Mathes.	62.50	0.00	60.50	46.89	2.48	11.53	18114.01
LlydsBkg	46.65	0.34	56.00	38.10	5.51	6.48	38340.62
LSE Group	8272	156.00	8612	6230	0.93	84.58	51443.31
Natl Grid	1020	0.50	1271.45	844.29	4.82	23.78	45608.45
Natwest Group	261.90	5.90	284.42	196.92	4.01	10.31	30918.44
Prudential	1030.5	87.10	1334	782.40	1.14	16.74	34609.94
ReckittB	6038	138.00	6824	5400	2.89	-26.13	52792.15
RELX	2337	12.00	2474	2056	2.04	30.83	54680.08
RioTinto	5584	205.00	6343	4436.95	9.00	5.84	85235.21
RollsRoyce	90.25	-0.60	161.91	64.44	-	61.39	9225.19
Shell PLC	2365.5	-1.50	2527	1535.56	2.56	12.47	203947.99
StandCh	592.60	2.60	641.00	414.00	1.50	13.29	20955.64
Tesco	228.50	-6.50	304.10	194.35	4.00	11.63	20657.98
Unilever♦	4178	64.50	4181	3267.5	3.47	21.45	129380.32
Vodafone	91.14	-1.92	141.60	89.87	8.49	-203.89	30550.51
WPP	877.00	0.40	1231.5	713.00	3.02	16.70	11473.39
United States of America ($)							
21stC Fox A	32.05	0.76	44.95	28.02	1.32	14.39	9694.31
3M	126.79	-2.25	179.18	107.07	4.21	13.89	70083.99
AbbottLb	107.45	0.49	142.60	93.25	1.51	30.24	187347
Abbvie	162.10	2.48	175.91	115.60	2.89	27.86	286670.69
Accenture	299.50	3.10	417.37	242.95	1.11	33.72	199102.56
Activision Bli.	75.71	2.24	82.00	56.40	0.56	24.40	59252.56
Adobe	339.27	4.97	675.21	274.73	-	37.00	157726.62
Advanced Micro	75.07	-0.07	156.73	54.57	-	32.39	121039.58
AEP	95.03	-0.44	105.60	80.30	2.85	21.24	48832.47
Aflac	72.07	-0.43	72.70	52.07	1.65	12.51	44812.3
AirProd	317.26	7.35	317.44	216.24	1.71	36.95	70389.2
Allstate	130.64	-4.78	144.46	106.11	2.24	8.53	34646.98
Alphabet	99.89	2.43	151.55	83.34	-	0.99	596642.97
Altria	47.24	2.50	57.05	40.35	6.72	39.08	84653.27
Amazon	94.52	1.11	177.50	85.87	-	1.62	964209.34
AmerAir	13.87	-0.63	21.42	11.65	-	-4.11	9014.13
AmerExpr	156.65	2.50	199.55	130.65	1.07	16.87	117054
AmerIntGrp	62.84	1.76	65.73	47.05	1.84	6.44	46688.86
AmerTower	219.14	-0.94	291.99	178.17	2.14	42.93	102032.81
Amgen	284.84	1.10	296.67	198.64	2.23	30.72	151982.03
Amphenol Corp	80.55	0.21	88.45	61.67	0.87	35.58	47934.87
Analog Devices	166.34	-0.75	187.69	133.48	1.51	61.93	84716.29
Anthem	482.58	21.82	-	-	-	-	-
Aon Cp	305.32	-1.76	341.98	246.21	0.59	61.00	63156.34
Apple	146.65	-1.46	182.13	129.04	0.53	26.96	2332925.5
Applied Materi.	105.71	-0.11	167.06	71.12	0.81	16.17	90943.3
Aptiv	102.87	-2.99	170.76	77.96	-	58.79	27872.58
ArcherDan	90.96	-6.44	98.88	61.86	1.47	21.05	49967.44
AT&T	19.01	-0.12	21.53	14.46	9.87	7.63	135448.64
Autodesk	202.40	1.74	285.38	163.20	-	99.24	43689.87
AutomData	268.59	4.64	269.40	192.26	1.29	46.10	111416.52
AutoZone	2560.92	-1.20	2610.05	1703.32	-	25.66	48609.91
Avago Tech	540.04	10.13	677.76	415.07	2.51	33.81	218714.96
BakerHu	29.59	1.09	39.78	20.42	2.26	75.93	29633.42
Bank of NY	45.20	-0.47	64.63	36.22	2.59	12.11	36534.25
BankAm	36.10	-1.61	50.11	29.31	1.95	11.21	289569.69
Baxter	53.43	-2.57	89.70	49.83	1.83	23.42	26935.17
BectonDick	249.87	11.81	277.29	215.90	1.21	47.93	70807.11
BerkshHat	474473.1	-4202.45	544389.26	393012.25	-	8.85	283177.88
Biogen	304.40	-0.75	311.88	187.16	-	32.45	43834.03
BlackRock	706.61	-31.18	933.06	503.12	2.11	20.50	106128.95
Boeing	177.37	-0.99	223.23	113.02	-	-27.51	105326.42
Booking Holdings	2071.8	87.17	2715.66	1616.85	-	81.54	80363.85
Bristol-Myers	81.00	1.76	81.44	54.67	2.24	28.78	172208.36
Broadcom	540.04	10.13	677.76	415.07	2.51	33.81	218714.96
Cadence Design	172.10	4.79	194.97	132.32	-	76.33	47209.78
CapOne	98.95	-2.77	160.54	90.27	1.82	4.07	37769.07
CardinalHlth	81.13	2.18	81.57	46.28	2.18	46.61	21267.96
Carnival	9.80	0.07	23.86	6.11	-	-1.29	10904.53
Caterpillar	236.79	1.09	239.85	160.60	1.63	22.19	123227.73
Centene Corp	85.47	0.61	98.53	69.51	-	41.56	48398.22
CharlesSch	82.25	0.64	96.24	59.35	0.79	32.22	149353.31
Charter Comms	388.09	-2.02	693.09	297.66	-	17.58	60414.86
Chevron Corp	182.06	-1.64	189.68	110.73	2.63	24.80	352032.63
Chipotle Mexic.	1613.73	98.53	1776.67	1196.28	-	78.13	44734.39
Chubb	218.31	2.08	222.00	173.78	1.31	12.56	90609.63
Cigna	326.87	2.97	331.05	193.63	1.10	23.04	99936.91
Cintas Corp	459.73	3.46	463.72	343.86	0.71	44.69	46683.43
Cisco	49.50	1.10	64.29	38.61	2.72	19.48	203368.47
Citigroup	47.15	-1.14	69.11	40.01	3.90	5.16	91322.61
CME Grp	176.60	1.60	256.94	166.58	1.84	26.86	63527.79
Coca-Cola	64.23	1.54	67.20	52.51	2.36	31.65	277741.86
Cognizant	62.23	1.31	93.47	51.33	1.39	17.04	31978.76
ColgtPlm	78.14	1.37	85.18	67.84	2.07	33.97	65259.46
Comcast	35.97	0.32	53.32	28.39	2.51	13.12	155179.34
ConocPhil	123.17	-3.65	138.49	66.06	1.43	22.50	153472.34
Constellation	260.46	2.97	261.53	207.59	1.06	-1300.29	41991.73
Corning	33.90	-0.22	43.47	28.98	2.55	29.36	28673.01
Corteva	67.13	0.80	68.43	43.74	0.72	31.40	47966.71
Corteva	67.13	0.80	68.43	43.74	0.72	31.40	47966.71
Costco	495.22	-38.44	612.27	406.51	0.58	43.83	219186.42
CrownCstl	139.59	-1.60	208.69	121.71	3.53	57.97	60449.17
CSX	32.13	0.11	38.63	25.80	1.10	19.67	67539.88
CVS	102.28	1.02	111.25	86.28	1.76	19.06	134392.54
Danaher	274.68	7.64	330.46	233.71	0.30	34.75	199958.18
Deere	444.74	3.27	448.40	283.81	0.80	27.08	134231.26
Delta	35.27	0.17	46.27	27.20	-	46.93	22614.71
Devon Energy	69.05	0.70	79.40	35.55	2.57	18.27	45137.99
Digital Realty	109.71	-1.56	176.53	85.76	3.81	20.48	31544.07
DiscFinServ	106.25	-2.48	129.12	87.64	1.60	6.61	29030.24
Disney	99.05	0.18	157.50	86.28	-	63.85	180626.79
Dollar General	242.35	-14.88	262.21	183.25	0.63	26.17	54666.52
DominRes	60.34	-1.19	88.78	57.95	3.77	20.97	50279.83
DukeEner	99.17	-0.45	116.33	83.76	3.55	22.30	76367.13
DuPont	71.42	0.17	84.08	49.52	1.52	24.51	35478.18
Eaton	161.50	-4.61	174.47	122.50	1.70	33.53	64228.55
eBay	45.06	0.02	68.54	35.92	1.44	131.46	24449.51
Ecolab	151.51	2.56	236.89	131.04	1.16	42.96	43154.3
Edwards Lifesc.	76.66	0.30	131.73	67.13	-	35.71	47395.85
Eli Lilly	373.10	7.85	375.19	231.87	0.82	67.59	354506.62
Emerson	96.56	0.44	100.00	72.41	1.90	23.38	57106.77
EOG Res	139.73	-2.91	150.88	80.67	1.04	19.39	82075.93
Equinix	686.17	11.51	847.10	494.89	1.51	137.58	63496.88
EquityResTP	64.06	0.53	94.32	59.32	3.39	20.73	24209.49
Exelon	40.87	0.80	50.71	29.10	3.38	26.04	40614.24
ExxonMb	110.78	-2.43	114.66	57.96	2.84	22.79	456224.55
Fedex	179.78	3.08	260.50	141.92	1.44	10.72	46781.01
Fidelity NIS	74.77	8.79	122.06	56.53	1.88	123.73	44366.74
Fiserv	104.95	2.46	110.94	87.03	-	58.47	66646.2
FordMtr	13.90	-0.19	25.87	10.61	0.65	3.46	54880.28
Franklin	27.16	0.39	35.18	20.24	3.75	7.97	13567.51
GenDyn	255.37	1.60	255.85	190.32	1.65	24.51	70110.2
GenElectric	86.34	-1.80	101.91	59.93	0.33	-29.46	94340.97
GenMills	85.87	2.90	86.73	61.67	2.16	25.15	50966.91
GenMotors	39.96	-0.50	67.21	30.33	-	6.61	56771.04
GileadSci	88.10	1.84	88.97	57.17	2.91	19.81	110498.88
GoldmSchs	382.06	-6.80	401.75	277.84	1.53	7.13	129378.73
Halliburton	39.18	2.82	43.99	20.77	0.60	24.41	35572.73
HCA Hold	239.00	-0.37	279.02	164.47	0.72	12.52	67569.38
Hew-Pack	29.61	-0.54	41.47	24.08	2.56	5.92	29785.85
Hilton Worldwi.	141.10	2.85	167.99	108.41	-	107.15	38161.34
HiltonWwde	141.10	2.85	167.99	108.41	-	107.15	38161.34
HomeDep	326.72	0.34	420.61	264.51	1.84	23.11	334471.9
Honywell	218.50	-1.55	220.96	166.63	1.56	30.63	146901.94
HumanaInc	545.70	4.75	571.30	363.73	0.46	26.69	69085.79
IBM	148.69	0.32	150.46	115.55	3.97	31.64	134434.55
IDEXX Laborato.	435.01	23.65	664.70	317.06	-	56.08	36026.2
IllinoisTool	227.91	-1.06	248.11	173.52	1.87	29.69	70010.85
Illumina	215.69	-3.30	397.44	173.45	-	47.45	33928.04
Intcntl Exch	109.23	2.11	138.46	88.60	1.09	16.87	61007.8
Intel	29.15	-0.20	55.00	24.59	4.30	6.65	120281.42
Intuit	403.75	11.28	684.07	339.36	0.57	56.06	113423.64
John&John	177.84	0.60	186.69	155.72	2.12	25.25	464959.76
JohnsonCn	68.06	1.21	81.69	45.52	1.52	34.46	46737.07
JPMrgnCh	134.15	-2.59	163.39	101.28	2.55	9.68	393489.44
Kimb-Clark	137.76	2.73	144.53	108.74	3.08	28.66	46492.91
KinderM	18.96	0.33	20.20	15.01	5.28	45.41	42617.19
KLA Corp	387.55	7.53	442.44	250.20	0.91	22.12	54922.94
Kraft Heinz	39.52	0.62	44.87	32.73	3.65	53.43	48403.12
Kroger	47.73	-1.31	62.78	41.73	1.49	24.16	34168.44
LasVegasSd	47.63	4.46	48.29	28.88	-	-34.97	36393.42
LibertyGbl	19.57	-0.49	29.08	15.22	-	0.93	3364.13
Lilly (E)	373.10	7.85	375.19	231.87	0.82	67.59	354506.62
Linde	338.10	-6.33	346.50	262.47	1.13	51.21	167147.25
Lockheed	497.04	13.58	498.37	328.33	2.02	23.66	130261.24
Lowes	215.74	4.77	263.31	170.12	1.27	19.68	133909.94
Lyondell	85.07	-1.73	117.22	71.46	4.71	5.62	27699.24
Marathon Ptl	118.74	-6.46	127.62	59.96	1.76	65.17	55648.79
Marsh&M	172.92	1.10	183.14	142.80	1.40	29.49	85769.96
MasterCard	358.05	6.76	399.92	276.87	0.57	45.32	341509.18
McDonald's	272.32	-2.68	281.67	217.68	1.74	30.07	199453.67
McKesson	387.96	4.62	401.78	216.38	0.41	48.71	55010.2
Medtronic	79.42	0.30	114.44	75.83	2.83	24.03	105561.35
Merck	109.76	2.26	110.98	71.50	2.17	25.04	278285.06
Meta	196.64	8.00	384.33	169.00	-	15.41	450997.53
Metlife	76.79	-0.16	77.36	57.41	2.23	11.65	60249.91
Microsoft	252.84	5.35	344.30	213.43	0.82	29.85	1884788.99
Mnstr Bvrg	103.76	0.39	104.49	71.78	-	44.76	54136.12
MondelezInt	67.66	0.97	69.47	54.72	1.77	24.68	92390.92
Monsanto	10.03	0.02	10.03	9.66	-	50.98	250.75
MorganStly	92.37	1.46	109.73	72.05	2.05	12.75	156115.41
Netflix	318.43	32.89	632.46	162.71	-	31.41	141707.88
NextEraE	84.58	-0.77	92.91	67.22	1.73	123.18	168064.37
Nike	111.79	5.83	173.35	82.22	0.94	32.40	141263.73
NorfolkS	254.25	1.93	296.87	203.65	1.48	23.28	58862.49
Northrop	548.39	20.56	556.27	347.87	1.01	13.96	84403.12
NXP	168.79	-3.90	239.91	132.08	1.20	27.56	43739.37
Occid Pet	68.71	-1.57	77.13	26.05	0.05	36.98	62447.13
Oracle	83.29	0.57	106.34	60.78	1.40	34.91	224550.21
Pepsico	185.39	1.28	186.62	153.37	2.07	37.44	255413.51
Perrigo	31.92	-1.03	43.90	31.30	2.71	-36.11	4297.7
Pfizer	51.28	2.07	61.71	41.45	2.74	14.47	287859.19
Phillips66	107.20	-3.58	113.53	67.93	3.05	40.02	50666.17
PhilMorris	103.55	5.30	112.48	82.85	4.27	19.69	160523.45
PNCFin	163.78	-3.87	214.50	143.52	2.64	14.30	66055.59
PPG Inds	136.72	3.36	172.78	107.06	1.57	33.26	32132.95
ProctGmbl	150.42	3.70	165.35	122.18	2.15	28.34	358826.83
Prudntl	107.63	-0.14	124.22	85.46	3.85	6.12	40038.36
PublStor	294.89	-3.72	421.76	270.73	2.45	33.13	51793.57
Qualcomm	124.93	1.48	192.68	101.93	1.94	15.87	140046.53
Raytheon	100.57	3.10	106.02	79.51	1.80	43.22	147849.3
Regen Pharm	763.26	27.03	769.63	538.01	-	11.76	81732.77
S&P Global	358.48	0.57	484.21	279.32	0.77	31.77	116792.78
Salesforce	143.67	-9.69	270.57	136.04	-	106.61	143665
Schlmbrg	52.79	1.96	56.04	27.65	0.85	44.34	74848.8
Sempra Energy	166.47	3.01	176.47	119.70	2.38	46.03	52327.07
Shrwin-Will	255.28	5.76	354.15	195.24	0.78	40.55	66152.97
SimonProp	119.22	-1.48	161.87	86.02	5.41	19.33	38978.48
SouthCpr	61.51	2.72	79.32	42.42	4.69	15.54	47553.29
Starbucks	103.98	4.42	117.34	68.39	1.60	31.16	119348.24
StateSt	77.47	0.41	103.76	58.62	2.54	11.95	28426.85
Stryker	241.62	8.88	279.28	188.84	0.96	51.42	91434.35
Sychrony Fin	35.77	-1.28	48.40	27.22	2.28	5.22	16115.87
T-MobileUS	151.67	0.62	154.38	101.51	-	69.78	188694.64
Target	163.57	0.19	254.87	137.16	1.76	12.74	75282.86
TE Connect	125.05	-2.94	164.12	104.76	1.43	18.84	39669.68
Tesla Mtrs	192.55	9.69	384.29	166.19	-	43.57	608025.23
TexasInstr	175.50	-1.57	199.86	144.46	2.16	23.56	159275.66
TheTrvelers	189.27	0.36	191.02	146.27	1.73	12.94	44354.96
ThrmoFshr	562.60	11.35	668.94	475.77	0.17	32.05	220649.22
TJX Cos	80.47	-0.56	81.17	53.69	1.18	32.73	92977.99
Truist Financial Corp	45.55	-1.37	66.10	40.01	3.68	11.30	60434.2
Twitter	53.70	1.26	60.16	31.30	-	-224.30	41093.72
UnionPac	215.10	1.77	278.94	183.70	1.94	22.04	132240.58
UPS	189.63	7.11	233.72	154.87	1.94	14.32	138392.29
USBancorp	45.47	1.21	60.50	38.39	3.49	9.89	67560.39
UtdHlthcre	536.84	-0.78	558.10	439.22	0.94	32.92	501596.2
ValeroEngy	128.40	-10.00	146.81	65.13	2.75	62.72	49501.19
Verizon	38.15	-0.88	55.51	34.55	5.99	7.95	160202.04
VertexPharm	318.74	5.76	323.61	201.51	-	39.22	81817.83
VF Cp	33.25	-1.09	78.17	26.46	5.34	12.09	12919.82
Visa Inc	215.88	2.09	235.85	174.60	0.56	39.63	351489.16
Walgreen	41.32	-0.34	53.46	30.39	4.19	6.64	35735.98
WalMartSto	152.73	-0.35	160.77	117.27	1.31	34.44	414531.99
Walt Disney	99.05	0.18	157.50	86.28	-	63.85	180626.79
Waste Manage.	168.93	4.47	175.98	138.58	1.23	43.66	69341.9
WellsFargo	45.35	-2.10	60.30	36.54	1.53	10.16	172786.71
Williams Cos	34.72	0.82	37.97	24.86	4.26	31.04	42294.67
Workday	168.80	19.82	285.58	128.72	-	1544.90	34096.59
Yum!Brnds	129.22	2.69	139.85	103.97	1.40	27.50	36399.71
Zoetis	156.64	6.54	249.27	124.15	0.58	40.67	73005.52
Zoom	75.20	-0.20	205.22	69.54	-	18.35	18873.33
Venezuela (VEF)							
Bco de Vnzla	2.00	0.58	2.14	0.32	112.72	-	648.90
Bco Provncl	4.39	0.49	4.39	1.70	-	0.00	146.45

Closing prices and highs & lows are in traded currency (with variations for that country indicated by stock), market capitalisation is in USD. Highs & lows are based on intraday trading over a rolling 52 week period.
♦ ex-dividend
■ ex-capital redistribution
price at time of suspension

FT 500: TOP 20

	Close price	Prev price	Day change	Day change %	Week change	Week change %	Month change %
Chna Utd Coms	4.74	4.72	0.02	0.42	0.94	24.7	39.00
SandsCh	21.35	21.45	-0.10	-0.47	3.31	18.3	56.20
SHOP	57.92	58.29	-0.37	-0.63	7.93	15.9	25.54
Bausch Hlth	10.36	10.34	0.02	0.19	1.36	15.1	15.88
Fidelity NIS	74.77	73.18	1.59	2.17	8.79	13.3	-9.70
Workday	168.80	169.48	-0.69	-0.40	19.82	13.3	8.41
China Vanke	15.72	15.74	-0.02	-0.13	1.82	13.1	55.95
ChUncHK	4.51	4.41	0.10	2.27	0.51	12.8	34.13
Netflix	318.43	316.95	1.48	0.47	32.89	11.5	9.23
LasVegasSd	47.63	46.89	0.74	1.57	4.46	10.3	25.45
PingAnIns	46.80	47.55	-0.75	-1.58	4.25	10.0	49.36
PngAnBnk	12.90	13.10	-0.20	-1.53	1.13	9.6	20.79
Prudential	1030.50	1016.00	14.50	1.43	87.10	9.2	22.44
Naspers N	2656.79	2671.30	-14.51	-0.54	210.91	8.6	29.20
ChinaMBank	38.50	39.05	-0.55	-1.41	3.05	8.6	49.61
HK Exc&Clr	315.20	317.20	-2.00	-0.63	23.80	8.2	51.00
ChinaLife	11.82	11.86	-0.04	-0.34	0.88	8.0	39.18
New Ch Life Ins	18.14	18.00	0.14	0.78	1.34	8.0	39.11
Halliburton	39.18	37.89	1.29	3.39	2.82	7.7	7.56
Petrobras	30.29	29.25	1.04	3.56	2.17	7.7	-9.29

Based on the FT Global 500 companies in local currency

FT 500: BOTTOM 20

	Close price	Prev price	Day change	Day change %	Week change	Week change %	Month change %
TrnCan	57.92	58.78	-0.86	-1.46	-7.33	-11.2	-3.96
CredSuisse	2.95	2.70	0.25	9.30	-0.37	-11.1	-29.76
Midea	0.34	0.34	0.00	0.00	-0.04	-10.5	-11.11
Suncor En	43.57	43.17	0.40	0.93	-4.24	-8.9	-6.67
Firstrand	61.24	60.79	0.45	0.74	-5.85	-8.7	-4.20
CanImp	59.11	59.81	-0.70	-1.17	-5.55	-8.6	-3.78
AmerMvl	18.34	18.71	-0.37	-1.98	-1.65	-8.3	-2.87
Hunng Pwr	3.46	3.49	-0.03	-0.86	-0.27	-7.2	24.56
ValeroEngy	128.40	132.03	-3.63	-2.75	-10.00	-7.2	2.31
Costco	495.22	503.86	-8.64	-1.71	-38.44	-7.2	-1.28
MitsubishiEle	1341.50	1373.50	-32.00	-2.33	-95.50	-6.6	2.14
ArcherDan	90.96	91.32	-0.36	-0.39	-6.44	-6.6	-6.15
Salesforce	143.67	147.00	-3.34	-2.27	-9.69	-6.3	-11.58
Keyence	56850.00	58390.00	-1540.00	-2.64	-3810.00	-6.3	-2.33
Dollar General	242.35	236.34	6.01	2.54	-14.88	-5.8	-5.02
SK Hynix	81900.00	84700.00	-2800.00	-3.31	-5000.00	-5.8	-2.38
MitsbCp	4441.00	4543.00	-102.00	-2.25	-267.00	-5.7	5.24
Nissan Mt	474.60	489.20	-14.60	-2.98	-27.90	-5.6	0.08
TokioMarine	2753.00	2802.50	-49.50	-1.77	-157.50	-5.4	0.92
Telenor	95.08	95.94	-0.86	-0.90	-5.42	-5.4	0.04

Based on the FT Global 500 companies in local currency

BONDS: HIGH YIELD & EMERGING MARKET

Dec 02	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
High Yield US$										
HCA Inc.	04/24	8.36	BB-	Ba2	BB	113.75	4.24	0.00	0.12	-
High Yield Euro										
Aldesa Financial Services S.A.	04/21	7.25	-	-	B	71.10	28.23	0.00	0.64	25.98
Emerging US$										
Peru	03/19	7.13	BBB+	A3	BBB+	104.40	2.60	-	-	0.34
Colombia	01/26	4.50	-	Baa2	BBB-	109.50	2.33	0.16	0.52	1.28
Brazil	04/26	6.00	-	Ba2	BB-	115.15	2.78	-0.01	0.65	1.73
Poland	04/26	3.25	-	A2	A-	111.22	0.98	0.03	0.16	-0.07
Mexico	05/26	11.50	-	Baa1	BBB-	149.00	1.61	0.00	-0.12	0.56
Turkey	03/27	6.00	-	Ba2	BB+	101.26	5.82	0.00	0.17	3.07
Turkey	03/27	6.00	-	B2	BB-	102.88	5.43	0.14	0.83	4.38
Peru	08/27	4.13	BBB+	A3	BBB+	103.50	3.66	0.01	-0.02	0.80
Russia	06/28	12.75	-	Baa3	BBB	168.12	2.48	0.07	0.05	-
Brazil	02/47	5.63	-	Ba2	BB-	101.48	5.52	0.08	0.80	-
Emerging Euro										
Brazil	04/21	2.88	BB-	Ba2	BB-	103.09	0.05	0.01	-0.09	-1.19
Mexico	04/23	2.75	BBB+	A3	BBB+	107.76	0.76	0.00	-0.07	-1.56
Mexico	04/23	2.75	-	Baa1	BBB-	106.48	-0.26	-	-	-0.36
Bulgaria	03/28	3.00	BBB-	Baa2	BBB	117.04	1.00	0.02	-0.15	-1.42

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company. US $ denominated bonds NY close; all other London close. *S - Standard & Poor's, M - Moody's, F - Fitch.

BONDS: GLOBAL INVESTMENT GRADE

Dec 02	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
US$										
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa1	A-	129.00	2.54	-0.01	-0.05	-
The Goldman Sachs Group, Inc.	02/28	5.00	BBB+	A3	A	117.21	2.47	0.00	0.32	-
NationsBank Corp.	03/28	6.80	BBB+	Baa1	A-	127.69	2.72	-0.01	0.06	-
GTE LLC	04/28	6.94	BBB+	Baa2	A-	128.27	2.80	0.00	-0.11	-
United Utilities PLC	08/28	6.88	BBB	Baa1	A-	130.43	2.62	-0.07	-0.22	-
Barclays Bank plc	01/29	4.50	A	A1	A+	96.46	5.02	0.00	0.02	-
Euro										
Electricite de France (EDF)	04/30	4.63	A-	A3	A-	137.45	0.82	-0.01	0.10	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	121.70	0.93	0.00	0.02	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	124.42	0.68	0.00	-0.11	-
Finland	04/31	0.75	AA+	Aa1	AA+	111.08	-0.27	0.00	-0.05	-0.87
Yen										
Mexico	06/26	1.09	-	Baa1	BBB-	98.73	1.34	-0.02	-0.14	0.27
£ Sterling										
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	137.45	2.19	-0.03	0.02	-
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	128.68	3.20	0.00	-0.01	0.40

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company. US $ denominated bonds NY close; all other London close. *S - Standard & Poor's, M - Moody's, F - Fitch.

INTEREST RATES: OFFICIAL

Dec 02	Rate	Current	Since	Last
US	Fed Funds	3.00-3.25	21-09-2022	2.25-2.5
US	Prime	6.25	22-09-2022	5.50
US	Discount	3.25	22-09-2022	2.50
Euro	Repo	0.53	01-11-2022	0.374
UK	Repo	3.00	02-11-2022	2.25
Japan	O'night Call	0.00-0.10	01-02-2016	0.00
Switzerland	Libor Target	-1.25-0.25	15-01-2015	-0.75--0.25

INTEREST RATES: MARKET

Dec 02 (Libor: Dec 01)	Over night	Change Day	Change Week	Change Month	One month	Three month	Six month	One year
US$ Libor	3.82400	0.001	0.005	0.030	4.17229	4.76500	5.17557	5.49471
Euro Libor	-0.64957	-0.064	0.000	0.001	-0.61943	-0.58057	-0.55600	-0.48571
£ Libor	0.18063	-0.005	0.000	0.035	3.28920	3.67930	4.22450	0.81363
Swiss Fr Libor				-0.002	-0.77540	-0.75300	-0.70280	-0.55320
Yen Libor				0.000	-0.06005	-0.04960	0.03266	0.04867
Euro Euribor				0.014	1.52600	1.97200	2.40500	2.84200
Sterling CDs				0.000	0.50000	0.63000	0.78500	
US$ CDs				0.020	4.20000	4.63000	5.03000	
Euro CDs				0.020	1.48000	1.90000	2.27000	

Dec 02	Short term		7 Days notice		One month		Three month		Six month		One year	
Euro	1.15	1.45	1.20	1.50	1.33	1.63	1.75	2.05	2.12	2.42	2.42	2.72
Sterling					0.45	0.55	0.58	0.68	0.71	0.86	0.90	1.05
US Dollar	3.63	3.83	3.65	3.85	4.10	4.30	4.53	4.73	4.93	5.13	5.16	5.36
Japanese Yen	-0.15	0.05	-0.20	0.00	-0.20	0.00	-0.15	0.05	-0.10	0.20	-0.05	0.25

Libor rates come from ICE (see www.theice.com) and are fixed at 11am UK time. Other data sources: US $, Euro & CDs: Tullett Prebon; SDR, US Discount: IMF; EONIA: ECB; Swiss Libor: SNB; EURONIA, RONIA & SONIA: WMBA.

BOND INDICES

	Index	Day's change	Month's change	Year change	Return 1 month	Return 1 year
Markit IBoxx						
ABF Pan-Asia unhedged	199.69	1.20	1.20	-9.15	6.40	-8.86
Corporates(£)	329.89	0.40	0.40	-16.65	3.95	-17.46
Corporates(€)	212.68	0.80	0.80	-11.94	3.36	-12.09
Eurozone Sov(€)	219.35	0.87	0.87	-13.79	3.07	-14.98
Gilts(£)	283.11	0.41	0.41	-21.24	2.71	-23.20
Overall(£)	290.18	0.40	0.40	-19.84	2.84	-21.52
Overall(€)	213.64	0.82	0.82	-13.39	3.04	-14.32
FTSE						
Sterling Corporate (£)	-	-	-	-	-	-
Euro Corporate (€)	104.47	-0.05	-	-	0.54	-1.73
Euro Emerging Mkts (€)	689.00	1.22	-	-	15.49	-11.90
Eurozone Govt Bond	110.04	-0.19	-	-	-0.34	-0.64

CREDIT INDICES	Index	Day's change	Week's change	Month's change	Series high	Series low
Markit iTraxx						
Crossover 5Y	444.60	1.80	-8.07	-98.19	688.92	434.12
Europe 5Y	87.76	1.06	-1.50	-23.17	142.08	85.48
Japan 5Y	76.64	1.03	-3.05	-24.32	119.29	75.61
Senior Financials 5Y	97.80	1.12	-1.41	-22.86	155.06	94.99
Markit CDX						
Emerging Markets 5Y	228.37	2.19	-7.04	-69.72	335.29	226.18
Nth Amer High Yld 5Y	458.06	5.49	1.45	-85.56	625.47	452.57
Nth Amer Inv Grade 5Y	76.91	1.29	-0.57	-17.13	110.98	75.62

Websites: markit.com, ftse.com. All indices shown are unhedged. Currencies are shown in brackets after the index names.

VOLATILITY INDICES

	Dec 02	Day Chng	Prev	52 wk high	52 wk low
VIX	19.42	-0.42	19.84	38.93	16.62
VXD	19.31	-0.66	19.97	45.37	3.27
VXN	25.38	-0.71	26.09	44.05	9.94
VDAX	20.33	-0.73	21.06	93.30	-

† CBOE. VIX: S&P 500 index Options Volatility, VXD: DJIA Index Options Volatility, VXN: NASDAQ Index Options Volatility. ‡ Deutsche Borse. VDAX: DAX Index Options Volatility.

BONDS: BENCHMARK GOVERNMENT

	Red Date	Coupon	Bid Price	Bid Yield	Day chg yield	Wk chg yield	Month chg yld	Year chg yld
Australia	-	-	-	-	-	-	-	-
	05/32	1.25	82.20	3.47	-0.05	-0.06	-0.05	-
	02/50	1.00	103.17	1.33	-0.10	-0.30	-0.10	1.00
Austria	02/29	0.50	90.09	2.23	-0.12	-0.05	-0.12	2.47
	02/47	1.50	83.29	2.42	-0.09	-0.06	-0.09	2.08
Belgium	06/27	0.80	94.55	2.07	-0.13	-0.06	-0.13	2.48
	06/47	1.60	81.46	2.64	-0.08	-0.03	-0.08	2.00
Canada	03/25	1.25	94.80	3.69	-0.13	-0.09	-0.13	2.50
	06/30	1.25	89.41	2.83	-0.15	-0.09	-0.15	1.41
	12/48	2.75	97.06	2.91	-0.15	-0.07	-0.15	1.08
Denmark	11/29	0.50	90.19	2.03	-0.13	-0.08	-0.13	2.21
	11/52	0.25	64.89	1.77	-0.08	-0.08	-0.08	1.60
Finland	09/24	0.00	96.39	2.09	-0.14	-0.03	-0.14	2.73
	09/29	0.50	88.92	2.28	-0.12	-0.02	-0.12	2.53
France	05/28	0.75	93.19	2.08	-0.14	-0.06	-0.14	2.37
	05/48	2.00	89.67	2.56	-0.08	-0.01	-0.08	1.97
Germany	08/29	0.00	89.00	1.76	-0.14	-0.06	-0.14	2.22
	08/50	0.00	63.43	1.66	-0.09	-0.05	-0.09	1.73
Greece	01/23	3.50	100.30	1.47	0.11	0.17	0.11	1.75
	01/28	3.75	103.20	3.07	-0.26	-0.19	-0.26	2.46
Ireland	-	-	-	-	-	-	-	-
	05/26	1.00	96.78	1.98	-0.14	-0.08	-0.14	2.36
	02/45	2.00	90.58	2.56	-0.09	0.00	-0.09	1.97
Italy	02/25	0.35	95.37	2.57	-0.16	-0.08	-0.16	2.60
	05/30	0.40	94.49	1.18	-0.22	-0.13	-0.22	1.85
	03/48	3.45	95.07	3.75	-0.11	0.07	-0.11	2.00
Japan	04/25	0.05	99.95	0.07	-0.01	0.00	-0.01	0.00
	12/29	0.10	99.31	0.20	-0.02	0.04	-0.02	0.24
	12/49	0.40	77.43	1.41	0.00	0.07	0.00	0.75
Netherlands	07/27	0.75	94.85	1.93	-0.13	-0.06	-0.13	2.41
	01/47	2.75	114.94	1.97	-0.08	-0.04	-0.08	1.96
New Zealand	05/31	1.50	81.54	4.11	-0.03	-0.06	-0.03	1.71
	09/40	2.50	121.65	2.24	-0.02	-0.13	-0.02	1.42
Norway	08/30	1.38	88.17	3.13	-0.03	0.03	-0.03	1.66
Poland	01/23	2.50	99.32	7.46	0.17	0.37	0.17	4.86
	07/27	2.50	83.83	6.66	-0.20	-0.25	-0.20	3.37
	04/47	4.00	63.69	7.20	-0.35	-0.20	-0.35	3.68
Portugal	04/27	4.13	108.02	2.17	-0.14	-0.04	-0.14	2.41
Spain	-	-	-	-	-	-	-	-
	10/29	0.60	88.01	2.51	-0.13	0.02	-0.13	2.34
	10/46	2.90	96.81	3.09	-0.08	0.03	-0.08	2.01
Sweden	06/30	0.13	117.24	-0.26	0.00	0.08	0.00	1.79
	03/39	3.50	125.69	1.69	-0.13	-0.05	-0.13	1.25
Switzerland	04/28	4.00	115.99	0.92	-0.07	0.07	-0.07	1.33
	06/29	0.00	94.13	0.93	-0.07	0.05	-0.07	1.27
United Kingdom	07/23	0.75	98.48	3.18	-0.01	0.10	-0.01	2.76
	07/27	1.25	91.56	3.22	-0.06	0.03	-0.06	2.61
	07/47	1.50	67.11	3.50	-0.01	0.16	-0.01	2.53
United States	-	-	-	-	-	-	-	-
	03/25	0.50	92.08	4.10	-0.13	-0.23	-0.13	3.17
	02/30	1.50	87.12	3.54	-0.16	-0.21	-0.16	2.17
	02/50	0.25	73.54	1.43	-0.21	-0.14	-0.21	-

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company.

GILTS: UK CASH MARKET

Dec 02	Price £	Red Yield	Change in Yield Day	Week	Month	Year	52 Week High	52 Week Low	Amnt £m
	-	-	-	-	-	-	-	-	-
Tr 0.75pc '23	98.49	3.19	2.57	1.59	14.75	717.95	100.82	97.34	34.36
Tr 0.125pc '24	96.34	3.38	2.11	1.81	13.04	550.00	99.44	94.34	35.55
Tr 2pc '25	96.69	3.27	2.83	3.81	7.57	505.56	105.86	93.15	39.93
Tr 0.125pc '26	91.04	3.13	2.29	0.00	-1.88	469.09	98.77	86.33	35.32
Tr 1.25pc '27	91.40	3.27	2.19	0.00	-3.25	463.79	104.30	85.65	40.99
Tr 0.875pc '29	85.80	3.19	1.59	0.63	-6.73	369.12	102.36	78.21	43.62
Tr 4.25pc '32	108.88	3.16	1.61	1.61	-9.20	285.37	135.62	98.13	40.33
Tr 4.25pc '36	108.37	3.46	2.06	2.06	-8.71	276.09	145.94	94.91	31.68
Tr 4.5pc '42	112.91	3.59	2.28	3.76	-7.24	281.91	169.96	93.79	28.35
Tr 3.75pc '52	104.23	3.52	2.62	5.71	-4.35	295.51	180.27	82.51	25.11
Tr 4pc '60	114.85	3.30	2.48	5.10	-5.17	334.21	213.01	87.32	25.13

Gilts benchmarks & non-rump undated stocks. Closing mid-price in pounds per £100 nominal of stock.

GILTS: UK FTSE ACTUARIES INDICES

Price Indices Fixed Coupon	Dec 02	Day's chg %	Total Return	Return 1 month	Return 1 year	Yield
1 Up to 5 Years	81.74	-0.13	2351.30	0.04	-4.47	3.29
2 5 - 10 Years	150.38	-0.32	3200.50	1.63	-13.79	3.21
3 10 - 15 Years	163.63	-0.60	3759.47	3.02	-20.75	3.42
4 5 - 15 Years	152.70	-0.40	3335.49	2.01	-16.00	3.29
5 Over 15 Years	231.61	-1.55	3987.75	2.68	-38.36	3.45
7 All stocks	140.34	-0.72	3134.51	1.62	-22.95	3.39

Index Linked	Dec 02	Day's chg %	Month chg %	Year's chg %	Total Return	Return 1 month	Return 1 year
1 Up to 5 Years	325.95	-0.20	0.08	2.65	2756.20	0.35	3.83
2 Over 5 years	572.67	-1.75	2.29	-38.98	4365.05	2.42	-38.70
3 5-15 years	463.51	-0.73	3.39	-16.19	3748.75	3.56	-15.55
4 Over 15 years	657.56	-2.41	1.43	-47.75	4865.89	1.55	-47.59
5 All stocks	538.52	-1.50	1.99	-34.86	4187.49	2.14	-34.51

Yield Indices	Dec 02	Dec 01	Yr ago		Dec 02	Dec 01	Yr ago
5 Yrs	3.14	3.09	0.54	20 Yrs	3.59	3.51	0.99
10 Yrs	3.32	3.26	0.81	45 Yrs	3.16	3.07	0.64
15 Yrs	3.53	3.46	0.96				

Real yield	inflation 0% Dec 02	Dur yrs	Previous	Yr ago	inflation 5% Dec 02	Dur yrs	Previous	Yr ago
Up to 5 yrs	-0.29	2.80	-0.36	-3.80	-0.63	2.82	-0.71	-4.21
Over 5 yrs	0.14	20.24	0.06	-2.63	0.12	20.30	0.03	-2.65
5-15 yrs	-0.10	9.75	-0.17	-3.20	-0.18	9.76	-0.26	-3.29
Over 15 yrs	0.20	26.83	0.11	-2.56	0.19	26.84	0.09	-2.57
All stocks	0.13	17.48	0.05	-2.64	0.10	17.57	0.01	-2.66

See FTSE website for more details www.ftse.com/products/indices/gilts

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COMMODITIES

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Energy		Price*	Change
Crude Oil†	Jan	81.94	0.72
Brent Crude Oil‡		86.84	-0.04
RBOB Gasoline†	Jan	2.35	0.01
Natural Gas†	Jan	6.62	-0.11
Base Metals (♠ LME 3 Months)			
Aluminium		2475.00	0.00
Aluminium Alloy		1675.00	-905.00
Copper		8344.50	-15.50
Lead		2206.00	24.00
Nickel		27600.00	290.00
Tin		23320.00	70.00
Zinc		3065.50	2.50
Precious Metals (PM London Fix)			
Gold		1803.15	49.65
Silver (US cents)		2213.50	57.50
Platinum		1041.00	16.00
Palladium		1904.00	-4.00
Bulk Commodities			
Iron Ore		103.10	1.27
Baltic Dry Index		1324.00	-14.00
Richards Bay ICE Futures		248.00	-2.75

Agricultural & Cattle Futures		Price*	Change
Corn♦	Dec	644.50	-5.50
Wheat♦	Dec	750.00	-8.75
Soybeans♦	Jan	1430.75	1.00
Soybeans Meal♦	Dec	421.00	0.10
Cocoa (ICE Liffe)⊕	Dec	2144.00	-5.00
Cocoa (ICE US)♥	Dec	2446.00	13.00
Coffee(Robusta)⊕	Jan	1890.00	-2.00
Coffee (Arabica)♥	Dec	170.45	3.75
White Sugar⊕		533.80	-4.60
Sugar 11♥		19.40	-0.22
Cotton♥	Mar	84.01	-0.84
Orange Juice♥	Jan	202.70	4.90
Live Cattle♣	Dec	152.93	-0.15
Feeder Cattle♣	May	134.88	-
Lean Hogs♣	Dec	83.15	0.25

	Dec 01	% Chg Month	% Chg Year
S&P GSCI Spt	618.14	-4.79	17.93
DJ UBS Spot	115.49	1.80	21.50
TR/CC CRB TR	302.14	1.48	30.15
LEBA EUA Carbon	58.91	-1.98	129.94
LEBA UK Power	1048.00	-37.43	-39.60

Sources: † NYMEX, ‡ ECX/ICE, ♦ CBOT, ⊕ ICE Liffe, ♥ ICE Futures, ♣ CME, ♠ LME/London Metal Exchange.* Latest prices, $ unless otherwise stated.

BONDS: INDEX-LINKED

	Price Dec 01	Yield Dec 01	Yield Prev	Month return	Value stock	Market	No of stocks
Can 4.25%' 26	111.90	1.189	1.373	0.72	5.25	74455.02	8
Fr 0.25%' 24	103.18	-1.644	-1.547	0.21	17.92	262438.94	17
Swe 1.00%' 25	125.69	-0.215	-0.212	0.01	35.38	219865.09	6
UK 0.125%' 24	104.22	-3.022	-2.905	0.23	15.24	603077.79	31
UK 2.50%' 24	378.30	-0.776	-0.661	0.19	6.82	603077.79	31
UK 2.00%' 35	255.67	-0.172	-0.103	0.77	9.08	603077.79	31
US 0.625%' 24	98.13	2.326	2.412	0.11	40.98	1653760.71	47
US 3.625%' 28	111.71	1.357	1.529	0.87	16.78	1653760.71	47

Representative stocks from each major market Source: Merill Lynch Global Bond Indices † Local currencies. ‡ Total market value. In line with market convention, for UK Gilts inflation factor is applied to price, for other markets it is applied to par amount.

BONDS: TEN YEAR GOVT SPREADS

	Bid Yield	Spread vs Bund	Spread vs T-Bonds		Bid Yield	Spread vs Bund	Spread vs T-Bonds
Australia	3.47	1.72	-0.07	Netherlands	1.93	0.17	-1.61
Austria	2.23	0.47	-1.31	New Zealand	4.11	2.35	0.57
Canada	2.83	1.07	-0.71	Norway	3.13	1.37	-0.41
Denmark	2.03	0.27	-1.51	Portugal	2.17	0.42	-1.37
Finland	2.28	0.53	-1.26	Spain	2.51	0.76	-1.03
Germany	1.76	0.00	-1.78	Sweden	-0.26	-2.01	-3.80
Italy	1.18	-0.58	-2.36	Switzerland	0.93	-0.83	-2.61
Japan	0.20	-1.56	-3.34	United States	3.54	1.78	0.00

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MANAGED FUNDS SERVICE

SUMMARY — FT.COM/FUNDS

Winners - EAA Fund Japan Large-Cap Equity

Fund Name	1yr Return GBP	3yr Return GBP	5yr Return GBP	3yr Sharpe Ratio	3yr Std Dev
Fidelity Japan Fund	-0.58	8.14	7.35	1.00	15.01
LF Ruffer Japanese Fund	-13.30	7.78	7.44	0.78	19.03
M&G Investment Funds (1) - M&G Japan Fund	4.87	6.50	2.73	0.77	18.37
DWS Nomura Japan Growth	-3.91	6.28	3.31	0.74	19.61
Goldman Sachs Japan Equity Partners Portfolio	-14.71	5.33	6.47	0.66	17.73

Losers - EAA Fund Japan Large-Cap Equity

Fund Name	1yr Return GBP	3yr Return GBP	5yr Return GBP	3yr Sharpe Ratio	3yr Std Dev
St. James's Place Japan Unit Trust Fund	-9.80	-6.58	-5.55	-0.01	17.28
Invesco Responsible Japanese Equity Value Discovery Fund (UK)	-8.17	-3.43	-2.70	0.19	17.80
T. Rowe Price Funds SICAV - Japanese Equity Fund	-17.93	-1.48	1.81	0.30	17.93
PineBridge Global Funds - Japan Equity Fund	-13.42	-1.45	-1.01	0.46	15.42
T. Rowe Price Funds OEIC Japanese Equity Fund	-19.05	-1.16	1.92	0.34	18.09

Morningstar Star Ratings

Fund Name	Base Currency	Morningstar Rating 3 Yr	Morningstar Rating 5 Yr	Morningstar Rating 10 Yr
Asian Dividend Fund W-ACC-GBP	Pound Sterling	★★★★	★★★★	-
MoneyBuilder Income Fund Y-ACC-GBP	Pound Sterling	★★★	★★★	★★★
Artemis US Select I Acc	Pound Sterling	★★★	★★★	-
Janus Henderson Asian Dividend Income Unit Trust Inc	Pound Sterling	★★	★★★	★★★
Artemis US Smlr Cos I Acc	Pound Sterling	★★	★★★★	-

Global Broad Category Group - Allocation

Morningstar Category	Base Currency	Total Ret 1Yr GBP	Total Ret 3Yr GBP	Total Ret 5Yr GBP
Moderately Aggressive Allocation	Hong Kong Dollar	-18.97	17.66	10.44
Euro Aggressive Balanced PP	Euro	11.77	14.77	-
Balanced Fixed Term	Baht	3.04	10.98	11.14
ZAR/NAD Aggressive Allocation	Rand	4.83	9.52	6.40
ZAR/NAD Flexible Allocation	Rand	1.76	9.24	6.98

Advertising Feature

McInroy & Wood Portfolios

Please remember that past performance is not necessarily a guide to future performance

Firm Name			
McInroy & Wood Portfolios Limited			
Fund Name			
Smaller Companies Fund Personal Class Units			
Morningstar Category			
Global Small/Mid-Cap Equity			
Max Annual Charge			
-			
3Yr Rating			
★★			
Morningstar Sustainability Rating			
Bid Price	-	KID Ongoing Charge	1.12
Offer Price	-	Day-End One Year Return	-21.80
+/-	33.90	Total Ret 3Yr	1.34

Performance

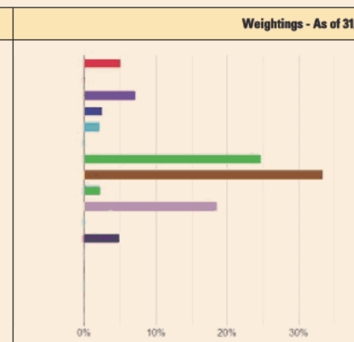
Dec 2019 - Dec 2022

Smaller Companies Fund Personal Class Units



Day ↗ 0.56% Month ↗ 3.87% Year ↘ -19.06%

Weightings - As of 31/10/2022



Sector	Weighting	Cat Avg.
Basic Materials	5.02%	5.99%
Communication Services	-	3.90%
Consumer Cyclical	7.08%	12.77%
Consumer Defensive	2.43%	5.44%
Energy	2.09%	4.73%
Financial Services	-	10.03%
Healthcare	24.67%	10.91%
Industrials	33.34%	18.67%
Real Estate	2.19%	4.10%
Technology	18.53%	15.06%
Utilities	-	2.06%
Cash & Equivalents	4.65%	5.51%
Corporate	-	0.15%
Derivative	-	0.64%
Government	-	0.06%
Municipal	-	-
Securitized	-	0.00%

Top 10 Holdings - As of 31/10/2022

Holding	Sector	Weighting
US Physical Therapy Inc	Healthcare	3.85%
Energy Recovery Inc	Industrials	3.80%
Watsco Inc Class A	Industrials	3.37%
Belimo Holding AG	Industrials	3.16%
Technology One Ltd	Technology	3.14%
Craneware PLC	Healthcare	2.99%
Asahi Intecc Co Ltd	Healthcare	2.97%
AptarGroup Inc	Healthcare	2.92%
Nabtesco Corp	Industrials	2.90%
Bapcor Ltd	Consumer Cyclical	2.84%

Risk Measures - As of 30/11/2022

	1Yr	1Yr Cat Ave	3Yr	3Yr Cat Ave	5Yr	5Yr Cat Ave
Alpha	-17.77	-6.39	-6.10	-2.02	-2.36	-1.83
Beta	1.13	1.02	0.98	1.03	0.99	1.03
Information Ratio	-1.56	-0.62	-0.75	-0.29	-0.35	-0.31
R Squared	86.52%	87.83%	87.27%	89.09%	86.85%	89.28%
Sharpe Ratio	-1.18	-0.57	0.03	0.24	0.12	0.23
Std Dev	27.81	23.79	24.34	23.99	21.25	20.98

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abrdn Capital (CI) Limited (JER)
PO Box 189, St Helier, Jersey, JE4 9RU 01534 709130
FCA Recognised
abrdn Capital Offshore Strategy Fund Limited

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Bridge Fund	£2.2014	-	-0.0057	1.89	-8.68	4.81
Global Equity Fund	£3.2882	-	-0.0167	1.19	-9.03	7.68
Global Fixed Interest Fund	£0.7549	-	0.0079	5.58	-14.84	-3.79
Income Fund	£0.6353	-	-0.0015	3.17	-5.18	4.79
Sterling Fixed Interest Fund	£0.6937	-	0.0020	3.73	-19.47	-5.10
UK Equity Fund	£1.9929	-	-0.0063	3.78	-2.99	0.51

Algebris Investments (IRL)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Algebris Financial Credit I EUR	€172.82	-	0.37	0.00	-9.98	1.22
Algebris Financial Credit R EUR	€148.69	-	0.31	0.00	-10.59	0.62
Algebris Financial Credit Rd EUR	€ 90.98	-	0.19	5.59	-10.58	0.67
Algebris Financial Income I EUR	€179.03	-	-0.08	0.00	-0.25	6.89
Algebris Financial Income R EUR	€162.92	-	-0.08	0.00	-1.14	5.93
Algebris Financial Income Rd EUR	€ 99.85	-	-0.05	4.16	-1.14	5.93
Algebris Financial Equity B EUR	€162.09	-	-1.15	0.00	14.50	11.99
Algebris IG Financial Credit I EUR	€ 95.73	-	0.70	0.00	-13.62	-1.53
Algebris IG Financial Credit R EUR	€ 94.26	-	0.69	0.00	-14.04	-2.03
Algebris Global Credit Opportunities I EUR	€124.45	-	0.50	0.00	-2.61	3.16
Algebris Global Credit Opportunities R EUR	€121.49	-	0.49	-	-3.20	2.80
Algebris Global Credit Opportunities Rd EUR	€106.80	-	0.43	-	-3.18	2.93
Algebris Core Italy I EUR	€142.28	-	0.69	0.00	-13.73	7.89
Algebris Core Italy R EUR	€135.07	-	0.65	0.00	-14.36	8.22
Algebris Financial Equity R EUR	€136.33	-	-0.97	0.00	13.36	10.92

The Antares European Fund Limited
Other International

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
AEF Ltd Usd	$551.35	-	4.50	0.00	-1.69	-5.35
AEF Ltd Eur	€508.23	-	3.51	0.00	-2.87	-6.07

Artemis Fund Managers Ltd (1200)F (UK)
57 St. James's Street, London SW1A 1LD 0800 092 2051
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Artemis SmartGARP UK Eq I Acc	2353.01	-	-18.74	-	9.19	10.72
Artemis Corporate Bond I Acc	98.77	-	0.23	2.90	-13.99	-0.63
Artemis SmartGARP Eur Eq I Acc	410.72	-	-3.67	2.83	0.41	4.25
Artemis European Opps I Acc	123.99	-	1.07	0.43	-7.55	2.69
Artemis SmartGARP GloEmr Eq I Acc	158.49	-	-2.27	-	-5.35	4.11
Artemis SmartGARP Glo Eq I Acc	376.86	-	-4.97	2.51	-0.07	7.70
Artemis Global Income I Inc	109.96	-	-1.50	4.23	3.19	8.30
Artemis Global Select I Acc	164.70	-	-1.11	0.55	-6.82	7.93
Artemis High Income I Q Inc	68.67	-	0.22	-	-9.54	-0.92
Artemis Income I Inc	251.03	-	0.14	4.01	7.01	4.71
Artemis Monthly Dist I Inc	70.33	-	-0.28	-	-2.20	2.97
Artemis Positive Future Fund	68.72	-	1.42	0.00	-32.89	-
Artemis Strategic Assets I Acc	93.20	-	0.06	-	17.16	2.64
Artemis Strategic Bond I Q Acc	101.67	-	0.33	3.51	-9.23	-1.08
Artemis Target Return Bond I Acc	104.34	-	0.07	2.79	-4.77	-
Artemis UK Select Fund Class I Acc	724.92	-	-1.42	1.99	-5.17	6.29
Artemis UK Smaller Cos I Acc	2041.72	-	13.10	1.65	-4.33	2.60
Artemis UK Special Sits I Acc	745.08	-	-1.84	1.86	-3.86	3.45
Artemis US Abs Return I Hdg Acc	111.31	-	-0.25	0.00	0.06	-1.11
Artemis US Extended Alpha I Acc	327.53	-	-3.02	0.00	-2.90	10.71
Artemis US Select I Acc	290.07	-	-3.39	0.00	-9.21	7.63
Artemis US Smlr Cos I Acc	309.86	-	-4.62	0.00	-13.82	7.25

Ashmore Group
61 Aldwych, London WC2B 4AE. Dealing team: +352 27 62 22 233
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Emerging Markets Equity Fund	$116.63	-	-0.42	0.00	-25.94	2.93
Emerging Markets Equity ESG Fund	$131.59	-	-0.65	0.00	-26.91	-
Emerging Markets Active Equity Fund	$119.51	-	-0.85	0.00	-21.60	-2.94
Emerging Markets Frontier Equity Fund	$180.08	-	0.28	0.39	-12.52	2.49
Emerging Markets Blended Debt Fund	$ 52.43	-	0.44	6.26	-22.24	-9.87
Emerging Markets Blended Debt ESG Fund	$ 84.06	-	1.08	0.00	-17.20	-6.92
Emerging Markets Debt Fund	$ 57.71	-	0.57	7.52	-24.50	-10.36
Emerging Markets Corporate Debt Fund	$ 59.01	-	0.28	9.48	-22.92	-7.57
Emerging Markets Local Currency Bond Fund	$ 59.92	-	0.09	4.18	-9.75	-4.51

Atlantas Sicav (LUX)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
American Dynamic	$6410.60	-	28.36	0.00	-20.22	6.85
American One	$6627.77	-	32.43	0.00	-17.10	8.92
Bond Global	€1581.48	1581.48	10.04	0.00	2.90	0.69
Eurocroissance	€1316.58	-	5.30	-	-18.37	4.24
Far East	$968.99	-	29.71	0.00	-26.26	0.79

Blue Whale Investment Funds ICAV (IRE)
www.bluewhale.co.uk, info@bluewhale.co.uk
FCA Recognised - Ireland UCITS

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Blue Whale Growth USD T	$ 9.09	-	0.08	0.00	-28.38	-

Brooks Macdonald International Fund Managers Limited (JER)
5 Anley Street, St Helier, Jersey, JE2 3QE
+44 (0) 1534 700 104 (Int.) +44 (0) 800 735 8000 (UK)
Brooks Macdonald International Investment Funds Limited

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Euro High Income	€1.2369	-	0.0049	2.50	-14.71	-5.23
High Income	£0.6623	-	0.0023	3.77	-17.38	-4.99
Sterling Bond	£1.2663	-	0.0042	2.06	-17.23	-4.88
Brooks Macdonald International Multi Strategy Fund Limited						
Cautious Balanced Strategy	£1.2503	-	0.0053	0.00	-10.11	-1.15
Cautious Balanced Strategy A	£0.8940	-	0.0038	1.12	-9.68	-
Balanced Strategy	£0.9187	-	0.0030	0.09	-8.05	-
Balanced Strategy A	£0.9196	-	0.0031	0.57	-7.15	-
Growth Strategy	£1.9350	-	0.0046	0.00	-9.14	0.47
Growth Strategy A	£0.9247	-	0.0023	-	-8.69	-
High Growth Strategy	£2.6961	-	0.0047	0.00	-10.24	1.40
High Growth Strategy A	£0.9193	-	0.0016	0.12	-9.79	-
US$ Growth Strategy	$1.6713	-	0.0188	0.00	-21.27	-0.97

Dealing Daily. Initial Charge Nil for A classes and up to 2% for other classes

Brown Advisory Funds plc (IRL)
http://www.brownadvisory.com Tel: 020 3301 8130
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
US Small Cap Blend Fund USD B	$ 22.09	-	-0.01	0.00	-5.15	6.19
US Flexible Equity Fund USD B	$ 23.16	-	-0.01	0.00	-12.01	8.42
Global Leaders Fund USD C	$ 20.41	-	0.15	0.00	-10.91	6.75
US Sustainable Growth Fund USD C	$ 22.87	-	0.13	0.00	-24.65	11.52
Global Leaders Sustainable Fund USD C	$ 12.45	-	0.09	0.00	-11.51	7.22
US Equity Growth Fund USD B	$ 46.83	-	0.30	0.00	-26.40	4.58
US Smaller Companies Fund USD B	$ 35.17	-	0.11	0.00	-11.23	6.57
US Mid-Cap Growth Fund USD C	$ 16.87	-	0.16	0.00	-19.93	3.29
Global Sustainable Total Return Bond GBP B	£ 9.48	-	0.05	-	-	-

CG Asset Management Limited (IRL)
25 Moorgate, London, EC2R 6AY
Dealing: Tel. +353 1434 5098 Fax. +353 1542 2859
FCA Recognised
CG Portfolio Fund Plc

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Absolute Return Cls M Inc	£135.68	136.29	-0.37	1.65	-2.00	4.64
Capital Gearing Portfolio GBP P	£37392.70	37598.88	-97.16	1.66	-3.14	4.77
Capital Gearing Portfolio GBP V	£181.86	182.86	-0.48	1.66	-3.14	4.77
Dollar Fund Cls D Inc	£170.16	170.16	4.08	1.20	-3.92	3.39
Dollar Hedged GBP Inc	£ 94.03	94.03	1.59	1.21	-14.34	-0.16
Real Return Cls A Inc	£201.29	201.90	-1.92	1.68	-3.88	2.39

Candriam Investors Group (LUX)
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Candriam Eqts L Australia Cap	A$1921.99	-	-8.93	0.00	5.93	9.77

Candriam Investors Group
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Candriam Eqts L Emerging Mkts Cap	€878.75	-	-14.16	0.00	-22.25	1.72
Candriam Bonds Credit Opportunities	€194.91	-	0.24	0.00	-3.69	-0.97
Candriam Bds Euro High Yield Cap	€1171.30	-	4.91	0.00	-7.72	-0.78
Candriam Bds Euro Sh.Term Cap	€1993.19	-	3.73	0.00	-3.60	-1.56

Chartered Asset Management Pte Ltd
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
CAM-GTF VCC	$27894.95	27894.95	-141.90	-	-6.36	3.78
CAM GTi VCC	$780.49	-	-32.39	-	12.31	4.69
RAIC VCC	$ 1.64	1.64	0.03	2.06	5.74	-1.66

Consistent Unit Tst Mgt Co Ltd (1200)F (UK)
Stuart House, St John's Street, Peterborough, PE1 5DD
Dealing & Client Services 0345 850 8818
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Consistent UT Inc	62.92	62.92	0.61	0.59	-14.93	7.78
Consistent UT Acc	169.70	169.70	1.60	0.59	-14.98	7.76
Practical Investment Inc	239.90	239.90	0.70	3.68	-3.12	5.09
Practical Investment Acc	1502.00	1502.00	5.00	3.68	-3.16	4.37

CP Global Asset Management Pte. Ltd.
www.cpglobal.com.sg, Email: customer_support@cpglobal.com.sg
International Mutual Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
CP Multi-Strategy Fund	$298.51	-	0.00	-	8.40	13.85

CP Capital Asset Management Limited
www.cpgbl.com, email: fundservices@cpgbl.com
International Mutual Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
CPS Master Private Fund	$414.33	-	-0.03	-	10.85	13.67
CP Global Alpha Fund	$342.37	-	1.50	-	10.98	13.85

DWS (LUX)
Tel: +44 (0) 20 7541 8999 www.dws.com
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
DWS Invest Top Dividend	£156.42	156.42	-0.13	-	11.24	6.08
DWS Invest Top Euroland	£152.29	152.29	0.41	0.86	-11.20	4.12
DWS Invest Multi Opportunities	£114.22	114.22	1.01	0.00	-1.42	2.09
DWS Invest Global Bonds	£ 92.49	92.49	0.75	0.00	-10.89	-3.64

Dodge & Cox Worldwide Funds (IRL)
48-49 Pall Mall, London SW1Y 5JG.
www.dodgeandcox.worldwide.com 020 3713 7664
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Dodge & Cox Worldwide Funds plc - Global Bond Fund						
EUR Accumulating Class	€ 15.87	-	-0.02	0.00	-0.44	2.54
EUR Accumulating Class (H)	€ 10.40	-	0.10	-	-9.33	-0.70
EUR Distributing Class	€ 11.63	-	-0.02	0.96	-3.26	1.55
EUR Distributing Class (H)	€ 7.56	-	0.07	-	-12.23	-1.75
GBP Distributing Class	£ 12.25	-	-0.08	0.86	-2.46	1.86
GBP Distributing Class (H)	£ 8.09	-	0.08	1.11	-11.28	-1.07
USD Accumulating Class	$ 12.05	-	0.12	0.00	-7.38	0.99
Dodge & Cox Worldwide Funds plc-Global Stock Fund						
USD Accumulating Share Class	$ 28.94	-	-0.09	-	1.47	8.45
GBP Accumulating Share Class	£ 38.88	-	-0.74	0.00	9.92	10.44
GBP Distributing Share class	£ 26.24	-	-0.50	-	9.12	10.17
EUR Accumulating Share Class	€ 41.30	-	-0.59	-	9.09	10.13
GBP Distributing Class (H)	£ 13.44	-	-0.05	0.53	-1.38	6.20
Dodge & Cox Worldwide Funds plc-U.S. Stock Fund						
USD Accumulating Share Class	$ 39.15	-	-0.12	0.00	2.65	11.44
GBP Accumulating Share Class	£ 49.74	-	-0.95	0.00	11.20	13.49
GBP Distributing Share Class	£ 29.86	-	-0.57	0.16	10.58	13.27
EUR Accumulating Share Class	€ 48.24	-	-0.70	0.00	10.34	13.15
GBP Distributing Class (H)	£ 15.55	-	-0.05	0.19	-0.12	9.14

Dragon Capital
www.dragoncapital.com
Fund information:info@dragoncapital.com
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Vietnam Equity (UCITS) Fund A USD	$ 24.53	-	1.08	0.00	-38.02	3.49

EdenTree Investment Management Ltd (UK)
PO Box 3733, Swindon, SN4 4BG, 0800 358 3010
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Amity Balanced For Charities A Inc	97.08	-	0.05	-	-8.41	0.05
Amity Global Equity Inc for Charities A Inc	156.00	-	-0.50	-	-1.34	6.79
EdenTree European Equity Cls A Inc	302.90	-	0.30	1.77	-0.27	6.45
EdenTree European Equity Cls B Inc	306.60	-	0.30	2.16	0.24	7.12
EdenTree Global Equity Cls A Inc	315.20	-	-1.70	0.08	-13.80	4.04
EdenTree Global Equity Cls B Inc	318.00	-	-1.80	0.67	-13.35	4.65
EdenTree Responsible and Sust S Dtd Bd B	93.38	-	0.07	0.95	-4.96	-1.31
EdenTree Sterling Bond Cls A Inc	86.92	-	0.17	3.81	-13.14	-2.88
EdenTree Sterling Bond Cls B Inc	98.09	-	0.20	3.80	-12.61	-2.28
EdenTree UK Equity Cls A Inc	218.70	-	1.30	0.97	-15.38	-3.37
EdenTree UK Equity Cls B Inc	218.20	-	1.20	1.63	-14.90	-2.75
EdenTree UK Equity Opps Cls A Inc	273.90	-	0.90	0.88	-21.90	-2.52
EdenTree UK Equity Opps Cls B Inc	279.80	-	1.00	1.56	-21.51	-1.92
Edentree Global Impact Bond B	86.39	-	0.42	-	-	-
Edentree Green Future B Net Inc	99.53	-	-0.17	-	-	-
EdenTree Managed Income Cls A Inc	119.90	-	-0.10	4.93	-6.68	0.68
EdenTree Managed Income Cls B Inc	127.90	-	-0.10	4.92	-6.24	1.20

Euronova Asset Management UK LLP (CYM)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Smaller Cos Cls One Shares	€ 51.85	-	-1.39	0.00	-21.25	3.94
Smaller Cos Cls Two Shares	€ 33.10	-	-0.89	0.00	-21.27	2.36
Smaller Cos Cls Three Shares	€ 16.52	-	-0.44	0.00	-21.97	2.06
Smaller Cos Cls Four Shares	€ 21.77	-	-0.59	0.00	-20.17	2.94

Fidelity Investments International
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Emerging Mkts NAV	£ 7.21	-	-0.16	1.91	-23.64	-4.66

FIL Investment Services (UK) Limited (1200)F (UK)
Beech Gate, Millfield Lane, Lower Kingswood, Tadworth, KT20 6RP
Callfree: Private Clients 0800 414161
Broker Dealings: 0800 414 181
OEIC Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Allocator World Fund W-ACC-GBP	£ 2.63	-	-0.02	1.18	-3.80	7.50
American Fund W-ACC-GBP	£ 52.31	-	-0.39	0.00	-17.05	3.56
American Special Sits W-ACC-GBP	£ 23.11	-	-0.33	0.48	18.09	12.57
Asia Fund W-ACC-GBP	£ 15.09	-	-0.22	0.27	-15.51	1.69
Asia Pacific Ops W-Acc	£ 2.82	-	-0.04	0.48	-8.26	9.39
Asian Dividend Fund W-ACC-GBP	£ 2.25	-	-0.03	2.93	-1.40	3.98
Cash Fund W-ACC-GBP	£ 1.03	-	0.00	-	1.07	0.42
China Consumer Fund W-ACC-GBP	£ 2.58	-	-0.02	0.00	-21.79	-5.02
Emerg Europe, Middle East and Africa Fund W-ACC-GBP	£ 1.62	-	-0.02	4.60	-47.70	-9.60
Emerging Asia Fund W-ACC-GBP	£ 1.85	-	-0.02	0.29	-11.44	4.78
Enhanced Income Fund W-INC-GBP	£ 0.85	-	-0.01	5.91	9.21	3.61
European Fund W-ACC-GBP	£ 23.43	-	0.01	-	1.65	9.19
Extra Income Fund W-ACC-GBP	£ 1.26	-	0.00	3.88	-14.44	-2.68
Global Dividend Fund W-ACC-GBP	£ 2.96	-	-0.01	-	4.67	6.69
Global Enhanced Income W-ACC-GBP	£ 2.30	-	-0.01	-	5.02	5.88
Global High Yield Fund W-ACC-GBP	£ 13.72	-	0.10	5.65	-12.28	-3.02
Global Property Fund W-ACC-GBP	£ 1.89	-	-0.02	1.62	-13.82	-2.94
Global Special Sits W-ACC-GBP	£ 53.97	-	-0.55	-	-4.87	8.56
Index Emerging Markets P-ACC-GBP	£ 1.64	-	-0.03	2.34	-11.92	1.64
Index Europe ex UK P-ACC-GBP	£ 1.85	-	0.00	1.94	-3.05	6.11
Index Japan P-ACC-GBP	£ 1.86	-	-0.02	1.93	-6.14	1.92
Index Pacific ex Japan P-Acc-GBP	£ 1.92	-	-0.03	3.54	6.30	4.35
Index Sterling Corporate Bond Fund P-ACC-GBP	£ 0.84	-	0.00	1.95	-17.82	-
Index UK Gilt Fund P-ACC-GBP	£ 0.77	-	0.00	0.58	-21.95	-
Index UK P-ACC-GBP	£ 1.57	-	-0.01	3.09	5.77	3.94
Index US P-ACC-GBP	£ 3.45	-	-0.04	1.10	-1.23	12.42
Index World P-ACC-GBP	£ 2.68	-	-0.02	1.42	-1.96	9.76
Japan Fund W-ACC-GBP	£ 5.51	-	-0.06	1.25	0.16	8.95
Japan Smaller Companies Fund W-ACC-GBP	£ 3.52	-	-0.04	0.60	-15.25	-0.37
MoneyBuilder Balanced Fund W-ACC-GBP	£ 0.60	-	0.00	-	-3.02	0.51
MoneyBuilder Dividend Fund W-INC-GBP	£ 1.28	-	0.00	3.71	9.37	4.13
Multi Asset Allocator Adventurous Fund W-ACC-GBP	£ 2.11	-	-0.01	1.09	-5.60	5.46
Multi Asset Allocator Defensive Fund W-ACC-GBP	£ 1.31	-	0.01	1.19	-11.01	-1.02
Multi Asset Allocator Growth Fund W-ACC-GBP	£ 1.83	-	-0.01	-	-7.47	3.24
Multi Asset Allocator Strategic Fund W-ACC-GBP	£ 1.58	-	0.00	-	-9.36	1.04
Multi Asset Balanced Income Fund W-INC-GBP	£ 0.96	-	0.00	-	-8.86	-1.28
Multi Asset Income & Growth Fund W-INC-GBP	£ 1.02	-	0.00	-	-7.00	0.05
Multi Asset Income Fund W-INC-GBP	£ 0.88	-	0.00	5.08	-12.54	-2.57
Multi Asset Open Advent W-ACC-GBP	£ 1.73	-	0.00	1.56	-1.03	5.15
Multi Asset Open Defen W-ACC-GBP	£ 1.33	-	0.01	1.85	-6.14	1.00
Multi Asset Open Growth Fund W-ACC-GBP	£ 1.64	-	0.00	-	-1.56	4.79
Multi Asset Open Strategic Fund W-ACC-GBP	£ 1.50	-	0.01	-	-3.85	2.60
Open World Fund W-ACC-GBP	£ 2.26	-	-0.01	0.85	0.00	7.87
Select 50 Balanced Fund PI-ACC-GBP	£ 1.13	-	0.00	-	-7.76	1.36
Short Dated Corporate Bond Fund W-ACC-GBP	£ 10.46	-	0.01	4.06	-6.29	-0.85
Special Situations Fund W-ACC-GBP	£ 42.44	-	-0.07	-	2.88	4.17
Strategic Bond Fund W-ACC-GBP	£ 1.18	-	0.01	2.18	-14.44	-2.70
Sustainable European Equity Fund W-ACC-GBP	£ 5.33	-	0.01	-	-6.78	3.80
Sustainable Global Equity Fund W-ACC-GBP	£ 33.01	-	-0.16	-	-5.93	8.31
Sustainable MoneyBuilder Income Fund W-ACC-GBP	£ 12.23	-	0.03	3.63	-18.08	-4.11
Sustainable Multi Asset Balanced Fund W-ACC-GBP	£ 0.93	-	0.00	1.57	-9.66	-
Sustainable Multi Asset Conservative Fund W-ACC-GBP	£ 0.90	-	0.00	1.70	-12.19	-
Sustainable Multi Asset Growth Fund W-ACC-GBP	£ 0.95	-	-0.01	-	-8.70	-
Sustainable Water & Waste W-ACC-GBP	£ 1.13	-	0.00	0.14	-13.53	-
UK Opportunities Fund W-ACC-GBP	249.40	-	0.50	1.26	-16.98	2.19
UK Select Fund W-ACC-GBP	£ 3.69	-	0.00	2.00	-0.94	3.78
UK Smaller Companies W-ACC-GBP	£ 3.52	-	0.02	1.12	-5.50	9.93

Findlay Park Funds Plc (IRL)
30 Herbert Street, Dublin 2, Ireland Tel: 020 7968 4900
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
American EUR Unhedged Class	€156.77	-	-2.20	0.00	-7.00	-
American Fund USD Class	$164.40	-	0.72	0.00	-13.95	7.03
American Fund GBP Hedged	£ 80.75	-	0.30	0.00	-15.88	5.40
American Fund GBP Unhedged	£134.00	-	-3.42	0.00	-6.59	8.95

Foord Asset Management
Website: www.foord.com - Email: info@foord.com
FCA Recognised - Luxembourg UCITS

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Foord International Fund | R	$ 49.52	-	0.55	0.00	4.50	5.31
Foord Global Equity Fund (Lux) | R	$ 16.14	-	0.18	0.00	-10.69	-
Regulated						
Foord Global Equity Fund (Sing) | B	$ 19.21	-	0.21	0.00	-10.83	4.87
Foord International Trust (Gsy)	$ 48.26	-	0.53	0.00	4.53	5.29

Fundsmith LLP (1200)F (UK)
PO Box 10846, Chelmsford, Essex, CM99 2BW 0330 123 1815
www.fundsmith.co.uk, enquiries@fundsmith.co.uk
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Fundsmith Equity T Acc	581.89	-	0.61	0.05	-8.52	8.03
Fundsmith Equity T Inc	530.99	-	0.56	-	-8.52	8.03

GAM
funds@gam.com, www.funds.gam.com
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
LAPIS GBL TOP 50 DIV.YLD-Na-D	£126.49	-	-2.98	2.55	18.05	7.60
LAPIS GBL F OWD 50 DIV.YLD-Na-D	£100.08	-	-0.83	1.09	-9.50	1.02

Guinness Global Investors

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Guinness Global Equity Income Y GBP Dist	£ 18.93	-	-0.31	2.22	8.97	11.63
Guinness Global Innovators Y GBP Acc	£ 25.17	-	-0.64	0.00	-15.95	10.34
Guinness Sustainable Global Equity Y GBP Acc	£ 11.24	-	-0.16	0.00	-10.06	-

HPB Assurance Ltd
Anglo Intl House, Bank Hill, Douglas, Isle of Man, IM1 4LN 01638 563490
International Insurances

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Holiday Property Bond Ser 1	£ 0.48	-	0.00	0.00	1.26	-2.57
Holiday Property Bond Ser 2	£ 0.63	-	0.00	0.00	0.32	-0.63

Hermes Property Unit Trust (UK)
Property & Other UK Unit Trusts

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Property	£ 7.87	8.48	0.04	-	18.73	5.43

Janus Henderson Investors (UK)
PO Box 9023, Chelmsford, CM99 2WB Enquiries: 0800 832 832
www.janushenderson.com
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Janus Henderson Asia Pacific Capital Growth Fund A Acc	1128.00	-	-14.00	-	-15.12	-0.87
Janus Henderson Asian Dividend Income Unit Trust Inc	79.99	-	-1.06	5.79	-3.70	-1.18
Janus Henderson Cautious Managed Fund A Acc	281.90	-	0.10	-	-3.95	0.81
Janus Henderson Cautious Managed Fund A Inc	139.80	-	0.00	-	-3.99	1.05
Janus Henderson China Opportunities Fund A Acc	1159.00	-	-9.00	0.00	-24.35	-6.46
Janus Henderson Emerging Markets Opportunities Fund A Acc	193.40	-	-2.30	0.00	-19.45	0.49
Janus Henderson European Growth Fund A Acc	283.90	-	0.60	1.25	-0.60	6.19
Janus Henderson European Selected Opportunities Fund A Acc	2133.00	-	-2.00	1.25	-3.88	6.20
Janus Henderson Fixed Interest Monthly Income Fund Inc	17.80	-	0.21	5.13	-16.62	-3.29
Janus Henderson Global Equity Fund Acc	4380.00	-	-9.00	0.00	-10.47	8.18
Janus Henderson Global Equity Income Fund A Inc	65.66	-	-0.40	3.32	6.06	5.91
Janus Henderson Global Sustainable Equity Fund A Inc	466.80	-	-2.10	0.00	-11.25	10.22
Janus Henderson Global Technology Fund A Acc	2744.00	-	-15.00	0.00	-19.88	8.59
Janus Henderson Instl UK Idx Opps A Acc	£ 1.13	-	0.00	2.91	4.49	-
Janus Henderson Multi-Asset Absolute Return Fund A Acc	161.90	-	0.70	-	2.99	4.32
Janus Henderson Multi-Manager Active Fund A Acc	254.40	-	1.10	-	-6.30	2.53
Janus Henderson Multi-Manager Distribution Fund A Inc	125.70	-	0.50	-	-7.17	-0.11
Janus Henderson Multi-Manager Diversified Fund A Acc	86.79	-	0.45	2.41	-8.81	-0.96
Janus Henderson Multi-Manager Global Select Fund Acc	307.80	-	-0.10	0.00	-5.20	5.91
Janus Henderson Multi-Manager Income & Growth Fund A Acc	187.00	-	0.80	-	-6.22	0.38
Janus Henderson Multi-Manager Income & Growth Fund A Inc	146.40	-	0.60	-	-6.91	0.15
Janus Henderson Multi-Manager Managed Fund A Acc	311.00	-	1.10	-	-5.70	2.00
Janus Henderson Multi-Manager Managed Fund A Inc	301.00	-	1.00	-	-5.70	2.00
Janus Henderson Sterling Bond Unit Trust Acc	205.80	-	0.40	1.45	-17.71	-4.70
Janus Henderson Sterling Bond Unit Trust Inc	56.48	-	0.10	1.46	-17.73	-4.72
Janus Henderson Strategic Bond Fund A Inc	106.10	-	1.20	3.37	-15.07	-2.82
Janus Henderson Absolute Return Fund A Acc	165.00	-	0.10	0.00	-0.18	1.67
Janus Henderson UK Alpha Fund A Acc	137.50	-	0.30	1.16	-19.64	-2.92
Janus Henderson UK Equity Income & Growth Fund A Inc	517.60	-	-0.70	-	4.93	2.56
Janus Henderson UK Property PAIF A Acc	£ 2.65	2.78	0.00	2.63	13.53	4.26
Janus Henderson UK Property PAIF A Inc	£ 1.06	1.11	0.00	2.68	13.53	4.32
Janus Henderson US Growth Fund A Acc	1648.00	-	-13.00	0.00	-17.52	6.93

Kleinwort Hambros Bank Limited (UK)
5TH Floor, 8 St James's Square, London, SW1Y 4JU
Dealing and enquiries: 033 0024 0785
Authorised Inv Funds
Unit Trust Manager/ACD - Host Capital

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
HC Kleinwort Hambros Growth A Acc	239.17	-	2.25	1.36	-6.40	2.70
HC Kleinwort Hambros Growth A Inc	217.00	-	2.05	1.38	-6.40	2.70
HC Kleinwort Hambros Equity Income A Inc	97.11	-	0.13	3.06	1.93	0.51
HC Kleinwort Hambros Equity Income A Acc	192.15	-	0.25	4.50	1.91	0.51
HC Kleinwort Hambros Multi Asset Balanced A Acc	170.77	-	1.16	0.81	-7.82	0.45
HC Kleinwort Hambros Multi Asset Balanced A Inc	161.42	-	1.10	0.81	-7.82	0.45
HC Kleinwort Hambros Fixed Income A Acc	123.18	-	-0.26	3.44	-10.31	-2.92
HC Kleinwort Hambros Fixed Income A Inc	93.32	-	-0.20	3.44	-10.31	-2.92

Lazard Fund Managers Ltd (1200)F (UK)
P.O. Box 364, Darlington, DL1 9RD
Dealing: 0870 6066408, Info: 0870 6066459
Authorised Inv Funds
Lazard Investment Funds (OEIC) B Share Class

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Developing Markets Acc	114.99	-	-1.77	0.51	-15.13	-2.32
Developing Markets Inc	112.59	-	-1.74	0.55	-15.14	-2.32
Emerging Markets Acc	343.68	-	-4.00	4.74	-5.41	0.62
Emg Mkts Inc	258.92	-	-3.02	4.97	-5.40	0.62
European Alpha Acc	1009.48	-	0.16	1.34	-4.33	4.18
European Alpha Inc	864.38	-	0.14	1.36	-4.33	4.18
European Smaller Cos Acc	654.95	-	4.94	-	-21.44	2.03
Global Equity Income Acc	225.75	-	-1.87	3.82	-0.25	7.11
Global Equity Income Inc	113.97	-	-0.94	3.92	-0.26	7.11
Managed Bal Inc	182.90	-	-0.43	-	-7.52	3.20
UK Income Acc	1575.52	-	-5.59	-	2.87	2.08
UK Income Inc	572.98	-	-2.03	-	2.87	2.08
UK Omega Acc	273.75	-	-1.28	1.94	1.23	2.51
UK Omega Inc	226.04	-	-1.06	1.98	1.23	2.50
UK Smaller Cos Inc	2001.70	-	8.44	0.40	-24.24	1.74

Lothbury Property Trust (UK)
155 Bishopsgate, London EC2M 3TQ +44(0) 20 3551 4900
Property & Other UK Unit Trusts

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Lothbury Property Trust GBP	£1925.43	1978.32	-159.01	2.82	-1.14	-0.30

M & G Securities (1200)F (UK)
PO Box 9038, Chelmsford, CM99 2XF
www.mandg.co.uk/charities Enq./Dealing: 0800 917 4472
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Charifund Inc	1473.38	-	-3.46	5.61	4.61	2.92
Charifund Acc	29022.07	-	-68.13	4.71	4.60	2.92
M&G Charibond Charities Fixed Interest Fund (Charibond) Inc	£ 1.11	-	0.00	1.99	-7.02	-1.57
M&G Charibond Charities Fixed Interest Fund (Charibond) Acc	£ 39.51	-	0.07	1.61	-7.02	-1.53
M&G Charity Multi Asset Fund Inc	£ 0.89	-	0.00	-	5.01	4.76
M&G Charity Multi Asset Fund Acc	£106.45	-	-0.37	-	5.01	4.77

MANAGED FUNDS SERVICE

MMIP Investment Management Limited (GSY)
Regulated
Multi-Manager Investment Programmes PCC Limited

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
UK Equity Fd Cl A Series 01	£2810.68	2842.19	142.84	0.00	-14.59	-0.37
Diversified Absolute Rtn Fd USD Cl AF2	$1588.98	-	5.05	-	-9.74	-0.92
Diversified Absolute Return Stlg Cell AF2	£1474.75	-	6.33	-	-10.49	-1.95
Global Equity Fund A Lead Series	£1721.66	1727.57	67.75	-	-7.60	3.14

Marlborough Investment Management Limited (UK)
Marlborough, PO BOX 1852 Lichfield, Staffordshire, England, WS13 8XJ. 0808 145 2500.
www.marlboroughfunds.com
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Balanced	222.82	222.82	0.33	0.18	-7.22	2.24
Bond Income	41.52	41.52	0.15	3.91	-17.26	-4.92
Cautious Inc	83.74	83.74	0.25	1.45	-6.37	-0.43
Emerging Markets	331.00	331.00	1.45	1.00	-8.04	2.87
Conservative P Acc	92.51	-	0.23	0.00	-8.24	-
European Multi-Cap	677.25	677.25	4.53	1.25	-15.40	12.63
Extra Income	87.49	87.49	0.00	4.15	-0.55	4.01
Far East Growth A Inc	225.82	225.82	-3.01	1.23	-16.84	0.69
Global	290.36	290.36	-0.29	0.00	-10.83	3.88
Global Bond Inc	136.55	136.55	0.35	2.76	-10.37	-2.77
High Yield Fixed Interest	62.61	62.61	0.10	4.49	-8.77	-0.78
Marlborough Technology Fund A	848.41	848.41	-0.69	0.00	-22.70	15.02
Multi Cap Income A Inc	121.40	121.40	0.90	5.27	-16.40	-3.51
Nano-Cap Growth A Acc	198.56	198.56	-10.28	0.00	-26.66	5.00
Special Situations A Acc	1687.65	1687.65	1.53	0.00	-28.07	0.67
UK Multi-Cap Growth A Inc	357.68	357.68	2.56	0.08	-19.85	0.81
UK Micro Cap Growth A	770.79	770.79	1.17	0.00	-32.34	2.07
US Multi-Cap Income	735.03	735.03	-5.22	1.44	0.15	9.32
MFM - Third Party Funds						
Junior Gold C Acc	29.90	29.90	0.40	0.00	-40.57	1.14
MFM Bowland	330.71	330.71	3.76	0.92	-12.46	6.46
MFM Hathaway Inc	144.88	144.88	-0.83	1.23	-14.32	-1.41
MFM UK Primary Opportunities A Inc	423.89	423.89	-0.73	1.01	-13.57	0.57

Marwyn Asset Management Limited (CYM)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Marwyn Value Investors	£329.72	-	-6.14	0.00	-	-7.17

McInroy & Wood Portfolios Limited (UK)
Easter Alderston, Haddington, EH41 3SF 01620 825867
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Balanced Fund Personal Class Units	5931.80	-	-21.20	1.40	-1.50	6.12
Income Fund Personal Class Units	2868.70	-	-8.10	2.40	1.95	4.58
Emerging Markets Fund Personal Class Units	2341.60	-	-24.40	1.48	1.74	3.71
Smaller Companies Fund Personal Class Units	6091.80	-	33.90	1.30	-19.06	2.20

Milltrust International Managed Investments ICAV (IRL)
mimi@milltrust.com, +44(0)20 8123 8316 www.milltrust.com
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
British Innovation Fund	£121.92	-	2.89	0.00	-	-
MAI - Buy & Lease (Australia)	A$103.45	-	0.50	0.00	-16.53	1.41
MAI - Buy & Lease (New Zealand)	NZ$ 91.20	-	-6.06	0.00	-7.20	-2.67
Milltrust Global Emerging Markets Fund - Class A	$ 93.40	-	1.72	0.00	-19.11	1.34

Milltrust International Managed Investments SPC
em@milltrust.com, +44(0)20 8123 8316, www.milltrust.com
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Milltrust Alaska Brazil SP A	$ 81.32	-	2.01	0.00	23.78	-
Milltrust Laurium Africa SP A	$104.75	-	1.02	0.00	6.56	-
Milltrust Marcellus India Fund	$130.79	-	1.31	0.00	-9.67	-
Milltrust Singular ASEAN SP Founders	$132.26	-	0.81	0.00	-16.69	-
Milltrust SPARX Korea Equity SP A	$104.82	-	0.46	0.00	-30.50	-
Milltrust Xingtai China SP A	$ 96.48	-	2.22	0.00	-	-
The Climate Impact Asia Fund SP (Class A)	$ 78.48	-	2.41	0.00	-23.03	-
The Climate Impact Asia Fund (Class B)	$ 77.86	-	2.39	0.00	-23.41	-

Ministry of Justice Common Investment Funds (UK)
Property & Other UK Unit Trusts

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
The Equity Idx Tracker Fd Inc	1898.00	-	3.00	2.50	-2.68	4.10

Distribution Units

Mirabaud Asset Management (LUX)
www.mirabaud.com, marketing@mirabaud-am.com
Conviction based investment vehicles details available here www.mirabaud-am.com
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Mir. - Glb Strat. Bd I USD	$115.55	-	1.02	-	-6.67	0.17
Mir. - DiscEur D Cap GBP	£163.08	-	-1.04	-	-24.62	5.08
Mirabaud - UK Equity High Alpha	£139.57	-	2.96	0.00	-15.11	2.19

Oasis Crescent Global Investment Funds (UK) ICVC (UK)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Oasis Crescent Global Equity Fund USD A (Dist)	$ 35.16	-	0.82	0.24	-6.49	3.57
Oasis Crescent Global Income Fund USD A (Dist)	$ 10.02	-	0.01	2.72	-6.15	0.06
Oasis Crescent Global Low Equity Fund USD D (Dist)	$ 12.34	-	0.03	0.59	-7.54	0.52
Oasis Crescent Global Medium Equity Fund USD A (Dist)	$ 13.70	-	0.04	0.14	-6.63	1.54
Oasis Crescent Global Property Equity Fund USD A (Dist)	$ 7.82	-	0.03	0.93	-21.24	-4.43
Oasis Crescent Global Short Term Income Fund USD A (Dist)	$ 0.93	-	-0.01	1.88	-2.49	0.08
Oasis Crescent Variable Fund GBP A (Dist)	£ 9.70	-	-0.04	0.17	-5.76	-0.40

Omnia Fund Ltd
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Estimated NAV	$946.10	-	-9.48	0.00	32.62	10.45

Orbis Investments (U.K.) Limited (GBR)
28 Dorset Square, London, NW1 6QG
www.orbis.com 0800 358 2030
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Orbis OEIC Global Cautious Standard	£ 11.82	-	-0.02	-	8.61	5.22
Orbis OEIC Global Balanced Standard	£ 19.20	-	-0.15	-	14.66	10.45
Orbis OEIC Global Equity Standard	£ 21.71	-	-0.33	1.91	3.50	8.90
Orbis OEIC UK Equity Standard	£ 11.30	-	0.00	3.21	6.51	10.68

Platinum Capital Management Ltd
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Platinum All Star Fund - A	$141.55	-	-	-	-14.05	2.28
Platinum Global Growth UCITS Fund	$ 8.28	-	0.18	0.00	-38.44	-9.12
Platinum Essential Resources UCITS Fund SICAV USD Class E	$ 11.93	-	0.12	0.00	32.85	9.93
Platinum Global Dividend UCITS Fund	$ 48.85	-	0.85	0.00	-14.75	-5.27

Polar Capital Funds Plc (IRL)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Automation & Artificial Intelligence Cl I USD Acc	$ 14.73	14.73	0.22	0.00	-27.55	6.25
Asian Starts I USD Acc $	$ 14.43	-	0.25	0.00	-23.37	6.85
Biotechnology I USD	$ 38.93	38.93	0.32	0.00	-1.09	14.33
China Stars I USD Acc $	$ 10.84	10.84	0.15	0.00	-22.96	0.88
Emerging Market Stars I USD Acc	$ 11.41	-	0.17	0.00	-24.44	3.91
European Ex UK Inc EUR Acc	€ 14.20	14.20	0.13	0.00	8.07	3.57
Financial Opps I USD	$ 14.02	-	0.05	2.56	-9.20	2.63
Global Convertible I USD	$ 13.76	13.76	0.13	0.00	-13.95	1.22
Global Insurance I GBP	£ 10.37	-	0.21	0.00	31.05	11.18
Global Technology I USD	$ 64.15	-	0.63	0.00	-32.76	6.40
Healthcare Blue Chip Fund I USD Acc	$ 18.62	18.62	0.20	0.00	3.79	9.02
Healthcare Dis I Acc USD $	$ 12.28	-	0.09	0.00	-13.82	-
Healthcare Opps I USD	$ 66.43	-	0.67	0.00	3.54	8.62
Income Opportunities B2 I GBP Acc	£ 2.91	2.91	-0.04	0.00	3.81	7.05
Japan Value I JPY	¥139.72	139.72	-2.11	0.00	11.91	3.65
North American I USD	$ 33.45	33.45	-0.01	0.00	-8.23	8.24
Smart Energy I USD Acc $	$ 9.32	9.32	0.09	0.00	-13.06	-
Smart Mobility I USD Acc $	$ 8.78	8.78	0.13	0.00	-18.70	-
UK Val Opp I GBP Acc	£ 12.08	12.08	0.07	0.00	-14.57	-0.57

Private Fund Mgrs (Guernsey) Ltd (GSY)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Monument Growth 29/11/2022	£545.69	551.04	0.48	1.06	-2.30	3.24

Prusik Investment Management LLP (IRL)
Enquiries - 0207 493 1331
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Prusik Asian Equity Income B Dist	$175.99	-	-1.33	4.58	0.24	1.50
Prusik Asia Emerging Opportunities Fund A Acc	$186.32	-	2.26	0.00	-16.23	6.10
Prusik Asia Fund U Dist.	£212.21	-	-1.41	-	-20.32	6.84
Prusik Asia Sustainable Growth Fund A Acc	$ 89.18	-	0.21	-	-	-

Purisima Investment Fds (UK) (1200)F (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 922 0044
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Global Total Fd PCG A	372.65	-	-2.82	0.00	-12.25	9.99
Global Total Fd PCG B	367.32	-	-2.78	0.00	-12.46	9.71
Global Total Fd PCG INT	360.55	-	-2.73	0.00	-12.68	9.44

Purisima Investment Fds (CI) Ltd (JER)
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
PCG B ✠	285.68	-	7.58	0.00	-20.32	6.45
PCG C ✠	277.92	-	7.37	0.00	-20.49	6.22

Ram Active Investments SA
www.ram-ai.com
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
RAM Systematic Emerg Markets Eq	$212.26	212.26	0.83	-	-9.99	6.64
RAM Systematic European Eq	€518.81	518.81	6.41	-	-12.74	3.57
RAM Systematic Funds Global Sustainable Income Eq	$151.00	151.00	0.86	0.00	-3.47	4.75
RAM Systematic Global Eq Sustainable Alpha	$109.52	109.52	0.36	-	-2.97	-1.10
RAM Systematic Long/Short European Eq	€152.49	152.49	0.11	-	-0.52	1.90
RAM Systematic US Sustainable Eq	$351.72	351.72	1.49	-	-16.09	3.44
RAM Tactical Global Bond Total Return	€139.14	139.14	0.63	-	-8.71	-1.98
RAM Tactical II Asia Bond Total Return	$142.43	142.43	0.72	-	-8.49	-1.88

Royal London (UK)
55 Gracechurch Street, London, EC3V rlam.co.uk
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Royal London Sustainable Diversified A Inc	£ 2.32	-	0.00	-	-13.18	2.84
Royal London Sustainable World A Inc	341.10	-	-0.70	0.00	-13.12	6.27
Royal London Corporate Bond Mth Income	75.47	-	-0.09	4.24	-15.72	-3.62
Royal London European Growth Trust	198.70	-	1.10	-	-4.68	6.51
Royal London Sustainable Leaders A Inc	762.30	-	0.60	1.03	-5.72	5.16
Royal London UK Growth Trust	619.70	-	2.20	2.01	-5.38	2.51
Royal London UK Income With Growth Trust	211.20	-	0.20	-	4.67	3.20
Royal London US Growth Trust	361.00	-	-0.20	0.00	-6.93	11.52

Additional Funds Available
Please see www.royallondon.com for details

Ruffer LLP (1000)F (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 601 9610
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
LF Ruffer Diversified Rtrn C Acc	106.71	-	0.51	0.85	4.97	-
LF Ruffer Diversified Rtrn C Inc	105.82	-	0.50	0.94	4.96	-
LF Ruffer European C Acc	763.47	-	0.34	0.82	-13.53	5.62
LF Ruffer European C Inc	136.96	-	0.06	-	-13.52	5.63
LF Ruffer Equity & General C Acc	563.76	-	1.24	0.77	2.35	7.48
LF Ruffer Equity & General C Inc	509.34	-	1.13	0.78	2.36	7.48
LF Ruffer Gold C Acc	220.15	-	-2.27	0.00	-17.39	6.99
LF Ruffer Gold C Inc	133.24	-	-1.38	-	-17.39	6.99
LF Ruffer Japanese C Inc	160.09	-	0.24	0.25	-13.46	7.56
LF Ruffer Japanese C Acc	344.89	-	0.51	0.24	-13.47	7.56
LF Ruffer Total Return C Acc	570.47	-	-0.07	2.41	3.77	8.69
LF Ruffer Total Return C Inc	355.77	-	-0.04	2.46	3.76	8.69

Rubrics Global UCITS Funds Plc (IRL)
www.rubricsam.com
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Rubrics Emerging Markets Fixed Income UCITS Fund	$132.83	-	0.49	0.00	-3.83	-1.21
Rubrics Global Credit UCITS Fund	$ 16.58	-	0.06	-	-8.35	-1.01
Rubrics Global Fixed Income UCITS Fund	$170.07	-	0.74	0.00	-5.33	-0.54

Scottish Friendly Asset Managers Ltd (UK)
Scottish Friendly Hse, 16 Blythswood Sq, Glasgow G2 4HJ 0141 275 5000
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Managed Growth ♦	342.70	-	-2.40	0.00	-0.98	7.33
UK Growth ♦	408.00	-	-1.80	-	-1.95	8.75

SICO BSC (c) (BHR)
+973 17515031.
www.sicobank.com

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Khaleej Equity Fund	$591.89	-	1.65	0.00	7.83	17.72
SICO Kingdom Equity Fund	$ 34.95	-	-0.31	0.00	2.48	19.90
SICO Gulf Equity Fund	$162.57	-	2.23	0.00	11.69	14.94

Slater Investments Ltd (UK)
www.slaterinvestments.com; Tel: 0207 220 9460
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Slater Growth A Acc	652.73	652.73	3.18	0.00	-21.28	4.11
Slater Income A Inc	141.67	141.67	0.04	5.22	-1.19	2.98
Slater Recovery A Acc	338.30	338.30	0.86	0.00	-14.68	8.35
Slater Artorius	289.77	289.77	1.48	0.00	-23.23	7.49

Stewart Investors (UK)
23 St Andrew Square, Edinburgh, EH2 1BB
enquiries@stewartinvestors.com
Client Services: 0800 587 4141
Dealing Line: 0800 587 3388
Authorised Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
SI Asia Pacific A Acc	1648.95	-	-5.82	0.00	-1.95	9.64
SI Asia Pacific A Inc	£ 2.92	-	-0.01	0.00	-2.15	9.20
SI Asia Pacific Leaders A Acc	891.13	-	-7.20	-	-7.85	8.15
SI Asia Pacific Leaders A Inc	£ 3.03	-	-0.02	-	-7.88	8.09
SI Asia Sustainability A Acc	754.01	-	-3.40	0.00	-2.56	9.97
SI Global Emerging Mkts A Acc	808.32	-	-9.42	-	6.03	2.33
SI Global Emerging Mkts Leaders A Acc	557.29	-	-7.13	-	0.84	1.48
SI Global Emerging Mkts Sus A Acc	370.93	-	-2.14	0.00	-7.46	3.15
SI Indian Sub-Cont A Acc	788.75	-	-5.69	0.00	3.24	16.89
SI Latin America A Acc	£ 2.18	-	-0.01	2.87	-4.66	-8.93
SI Worldwide Equity A Acc	£ 2.36	-	0.05	-	21.94	8.37
SI Worldwide Equity A Inc	£ 2.39	-	0.05	-	23.40	8.80
SI Worldwide Leaders A Acc	583.34	-	-3.42	0.00	-7.33	8.04
SI Worldwide Sus A Acc	£ 2.62	-	0.02	0.00	-13.04	5.40
SI Worldwide Sus A Inc	£ 2.53	-	0.01	0.00	-12.99	5.50

STONEHAGE FLEMING
GLOBAL BEST IDEAS EQUITY FUND

Stonehage Fleming Investment Management Ltd (IRL)
www.stonehagefleming.com/gbi
enquiries@stonehagefleming.com
Regulated

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
SF Global Best Ideas Eq B USD ACC	$225.46	-	2.50	-	-19.93	6.04
SF Global Best Ideas Eq D GBP INC	£278.84	-	-5.19	-	-13.07	7.93

Superfund Asset Management GmbH
www.superfund.com, +43 (1) 247 00
Other International Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Other International Funds						
Superfund Green Gold	$1234.68	-	43.14	0.00	-13.39	4.48
Superfund Green Silver	$1092.50	-	55.34	0.00	-12.78	6.78
Regulated						
Superfund Green US$	$969.31	-	4.89	0.00	-12.13	0.32

Thesis Unit Trust Management Limited (UK)
Exchange Building, St Johns Street, Chichester, West Sussex, PO19 1UP
Authorised Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
TM New Court Fund A 2011 Inc	£ 18.27	-	0.12	0.00	-7.96	3.72
TM New Court Fund - A 2014 Acc	£ 18.43	-	0.12	-	-7.94	3.71
TM New Court Equity Growth Fund - Inc	£ 19.83	-	0.17	0.00	-10.19	4.20

Toscafund Asset Management LLP (UK)
www.toscafund.com
Authorised Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Aptus Global Financials B Acc	£ 4.73	-	-0.05	4.03	0.98	8.77
Aptus Global Financials B Inc	£ 3.06	-	-0.03	4.51	0.98	10.84

Toscafund Asset Management LLP
www.toscafund.com

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Tosca A USD	$406.01	-	8.84	0.00	-4.39	11.27
Tosca Mid Cap GBP	£170.45	-	1.07	0.00	-34.27	-18.16
Tosca Opportunity B USD	$261.12	-	2.32	0.00	-33.86	-17.38
Pegasus Fund Ltd A-1 GBP	£ 40.62	-	0.28	0.00	-33.97	-18.23

Troy Asset Mgt (1200) (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 608 0950
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions
Trojan Investment Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Trojan Ethical O Acc	125.91	-	0.22	0.00	-1.80	5.69
Trojan Ethical Global Inc O Acc	102.13	-	-0.14	2.54	2.97	-
Trojan Ethical Global Inc O Inc	99.59	-	-0.14	2.56	2.93	-
Trojan Ethical O Inc	125.66	-	0.22	0.00	-1.81	5.69
Trojan Ethical Income O Acc	136.89	-	0.74	2.56	-4.47	-0.79
Trojan Ethical Income O Inc	114.71	-	0.62	2.61	-4.47	-0.80
Trojan Fund O Acc	383.51	-	0.30	0.00	-0.89	5.68
Trojan Fund O Inc	310.42	-	0.24	0.00	-0.89	5.68
Trojan Global Equity O Acc	457.69	-	-0.36	0.00	-8.46	6.22
Trojan Global Equity O Inc	377.63	-	-0.30	0.00	-8.47	6.22
Trojan Global Income O Acc	156.83	-	-0.43	-	7.01	6.48
Trojan Global Income O Inc	130.98	-	-0.36	-	7.00	6.48
Trojan Income O Acc	343.05	-	1.44	2.71	-5.33	-1.51
Trojan Income O Inc	169.83	-	0.71	2.77	-5.33	-1.51

Unicorn Asset Management Ltd (UK)
PO Box 10602, Chelmsford, Essex, CM1 9PD 0845 026 4287
Authorised Inv Funds

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
UK Growth A Inc	612.82	-	3.36	0.34	-19.67	-0.74
Mastertrust A Inc ✠ F	589.76	-	2.16	-	-10.77	4.28
UK Growth B Inc	616.35	-	3.39	1.20	-19.03	-0.01
Mastertrust B Inc ✠ F	528.61	-	1.95	-	-10.08	5.05
Outstanding British Cos A Acc ✠ F	279.77	-	1.48	0.63	-11.57	-4.05
Outstanding British Cos B Acc ✠ F	307.71	-	1.63	1.43	-10.89	-3.32
UK Smaller Cos A Inc ✠ F	598.44	-	3.29	1.18	-13.57	1.46
UK Smaller Cos B Inc ✠ F	583.62	-	3.22	2.02	-12.90	2.20
UK Income A Acc ✠ F	311.54	-	2.42	5.59	-9.18	-1.98
UK Income A Inc ✠ F	208.43	-	1.62	5.80	-9.17	-2.14
UK Income B Acc ✠ F	348.70	-	2.72	-	-8.50	-1.25
UK Income B Inc ✠ F	233.43	-	1.82	-	-8.50	-1.39

Zadig Gestion (Memnon Fund) (LUX)
FCA Recognised

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
Memnon European Fund - Class U2 GBP	£238.09	-	-2.15	-	11.06	8.67

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OEIC: Open-Ended Investment Company. Similar to a unit trust but using a company rather than a trust structure.
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Selling price: Also called bid price. The price at which units in a unit trust are sold by investors.
Buying price: Also called offer price. The price at which units in a unit trust are bought by investors. Includes manager's initial charge.
Single price: Based on a mid-market valuation of the underlying investments. The buying and selling price for shares of an OEIC and units of a single priced unit trust are the same.
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It is time for HR to go back to basics



Andrew Edgecliffe-Johnson

Corporate culture

Pity HR. From hybrid work to quiet quitting, there are few current management preoccupations that do not end up becoming the human resources team's problem.

"Human capital" is this decade's business buzzword; a rebranding of the "our people are our greatest asset" cliché for an age when financial capital has been easier to come by than skilled labour.

If tight employment markets have made HR's basic tasks of recruitment and retention more challenging, its job has been complicated further by the #MeToo and Black Lives Matter movements, which forced organisations to confront how little they had really valued some of their supposed assets.

Throw in a pandemic, a revival in labour unions and the arrival of a generation with more demanding expectations of management, and it is easy to understand why one recent survey of US and UK HR professionals found that 98 per cent of them felt burnt out. (Employee burnout, incidentally, is another of the problems that HR is supposed to be solving.)

Now a turn in the economic tide means that many HR departments are dealing with wage pressures from employees struggling with high inflation while simultaneously having to manage lay-offs.

At Amazon and other Big Tech businesses that have led the way in shedding staff, the HR teams were among the first to be cut. By definition a company does not need as many people to do "onboarding" when it is trying to employ fewer people.

One analysis suggests that HR functions account for only 10 per cent of this year's tech industry lay-offs but because HR departments are relatively small, this means that half of the HR jobs in those companies may have been cut. Remember that these include groups such as Meta, whose corporate culture and generous benefits were once the envy of other workplaces. The owner of Facebook is now feeling less munificent, reportedly cutting coveted perks such as free dry cleaning.

But if HR is overwhelmed, perhaps it is time for it to do less. The core functions of recruiting, engaging and developing the best employees are not about to become less important. That said, there have been too many instances of mission creep among these corporals in the war for talent.

As less exciting companies pursued the elusive goal of staff engagement by trying to make every office park a pastiche of the Google headquarters, there has been a boom in the more superficial end of the corporate wellness industry.

It is something to be celebrated that two out of three US employers see their workers' wellbeing as one of their top health priorities over the coming years, according to a Willis Towers Watson survey.

But too many leaders have been tempted to think that a book club, a meditation app or a weekly yoga session will be enough to make their restive troops more loyal. And for all the investment in such supposed morale-boosters, Gallup reports that the percentage of employees who think that their organisation cares about their wellbeing has actually slumped below pre-pandemic levels. Just 21 per cent of the world's employees describe themselves as being engaged at work.

The toll of this disaffection is real. Gallup estimates that the lost productivity, absenteeism and workflow disruptions attributable to disengaged workers adds up to $7.8tn, or 11 per cent of global gross domestic product.

The pollsters' recommendation is that leaders' response should be to "add wellbeing measurements to their executive dashboards [and] prioritise employee wellbeing as part of their employer brand promise." Really? There may be a more back-to-basics alternative.

Training managers to be better leaders could push the tasks overwhelming HR down to those with a better sense of what is right for their teams

Most workers care first and foremost about whether they feel fairly rewarded for their efforts, whether their ideas and complaints will be heard, whether they are advancing in their careers, whether they are trusted to work flexibly and whether they will get the support they need in a crisis.

Most would like better paid leave, childcare and pensions. Staff suffering from burnout might find mindfulness sessions or advice on healthy eating helpful, but hiring an extra colleague to share the work with would probably help them more.

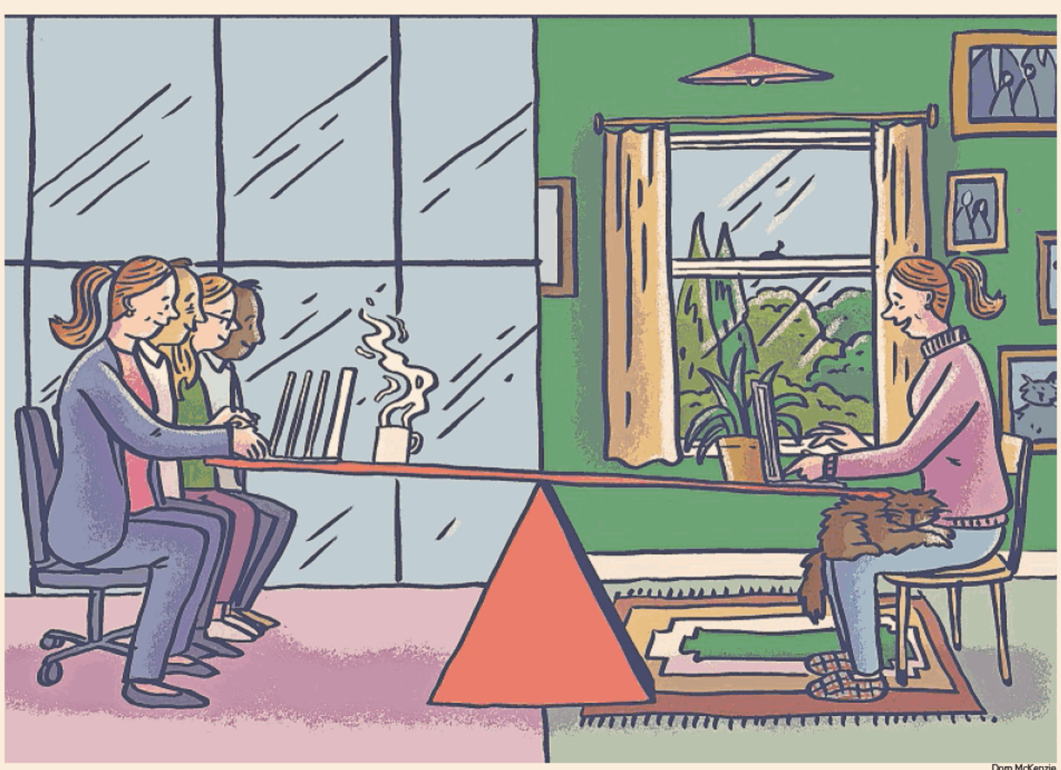
Training managers to be more effective leaders could push many of the tasks overwhelming HR departments down through the organisation, to people with a better sense of what is right for their teams than a centralised HR team could ever have.

If HR gets those basics right, it might have to spend less time and energy on the hollow perks. The concierge services were nice while they lasted but most of us can do our own laundry.

andrew.edgecliffe-johnson@ft.com

Mental health

Workplace wellbeing: how to make it better — and what makes it worse



Dom McKenzie

New research shows work-related stress is rising, but flexibility and support from managers can help. By *Andrew Jack*

Ian Edwards has long sought to improve the wellbeing of employees at Nomura, but in the past few years he has observed new pressures on their physical and mental health, productivity and retention in the workforce.

As health and safety manager for the UK operations of the Japanese bank, he has seen a notable jump in stress linked to caring for family members during and since the outbreak of Covid-19, as well as growing financial worries and fear about climate change.

"We saw social anxiety increase," he says. "There are also a whole series of financial and environmental concerns affecting our employees. They are worrying about where their fish [in their diet] are coming from, whether the house will flood."

Fresh data from more than 8,500 employees in 65 organisations participating in Britain's Healthiest Workplace — a survey conducted by health insurer Vitality with partners including the Financial Times, and which has consistently rated Nomura as a strong performer — underscore his views.

It shows a surge in mental ill-health and anxiety compared with previous years, and a rise in sickness absences and "presenteeism", or unproductive working. It also highlights the effects of recent trends, including the sharp increase in remote working sparked by lockdowns and infection-control measures in response to Covid-19.

The survey suggests that employees who are able to adopt hybrid working patterns — balancing their time between office and home — have the highest levels of job satisfaction and the lowest levels of presenteeism and absenteeism. The least productive were those required to be away from home in workplaces other than an office — such as a factory or retail outlet.

Since the start of Covid-19 especially, employers have shown increased interest in staff wellbeing as they seek to support continued growth in their organisations. They have explored new approaches and tools, from mindfulness apps to restructuring roles and responsibilities. That has sparked a thriving wellness industry offering programmes that claim to improve health.

But experts who study the topic warn that there is a lack of rigorous research on cause and effect, and which interventions really work. Jan-Emmanuel De Neve, an economist at the Saïd Business School at Oxford university, says: "There is little 'gold standard' evidence with randomised control trials. There are lots of small pilots which are often not well evaluated or reported on.

"There is one piece of really good evidence: you can't yoga your way out of these more structural issues underpinning mental and physical health. That's not to say mindfulness is a bad thing, but it's not addressing the main structural causes."

Staff with hybrid working patterns were found to have the highest job satisfaction. The least productive workers, meanwhile, were those who had to be away from home in settings such as factories or retail outlets

He points to a rigorous analysis published in 2019 called the Illinois Workplace Wellness Study, which explored the effects over two years of a comprehensive workplace wellness programme called iThrive in Urbana-Champaign in the US. It concluded that while workers on the programme reported good health, there was a strong selection bias: participants tended to be wealthier and healthier, while the employees who could have gained most — including smokers and those who already had higher health costs — did not engage.

De Neve's own recent research at BT, the telecoms company, has shown a connection between the presence of windows in offices — providing call centre staff with visual exposure to the weather — and their mood and productivity levels, which rose when they were happier.

Yet he is cautious of drawing any simple conclusions on the applicability of such findings in practice. He points to wider research on the importance for wellbeing of strong workplace social networks, supportive teams, mentoring, individual autonomy, flexibility and a sense of purpose.

Others share his views on the need to tackle these deeper structural issues linked to management style and work culture. Nancy Hey, executive director of the What Works Centre for Wellbeing, says: "Interesting work, relationships and flexibility are top drivers of employee wellbeing at work."

She says there has been an improvement in recent years, as employers have taken up these wider issues. Those which performed best had already appointed chief medical officers before the pandemic, and introduced strategies for physical and mental wellbeing — including plans for flexible working.

But she also stresses the difficulties for line managers, who are pivotal in trying to foster a more supportive work culture while not having full freedom to do so — and while they also struggle with the same problems as those they supervise. "They are often miserable and at an age of peak misery themselves."

Jeffrey Pfeffer, professor of organisational behaviour at Stanford's Graduate School of Business, and author of books on the topic including *Dying for a Paycheck*, points to a still more existential cause of poor employee wellbeing in the workplace: economic insecurity around pay and employment.

"Forty years of research on the effects of lay-offs show they lead to increased suicide rates, overeating, drinking, smoking and drug use," he says. He argues that in the height of the pandemic, many employers embraced wellness programmes as they worried about recruitment and retention. But their commitment has waned rapidly since the more recent economic slowdown.

'You can't yoga your way out of these more structural issues underpinning [ill] health'

Citing the recent job shake-out in the technology sector, he says: "A year ago they said they were concerned, but as soon as there is any change in the economy, all that goes out of the window and they let people go. If employers were actually concerned, they wouldn't increase insecurity."

He points to a few exceptions among businesses which have resisted such cyclical policies of hiring and firing: Southwest Airlines, the outdoor equipment company Patagonia and Barry-Wehmiller, the industrial group, which during the Great Recession of 2008-09 shared the pain by reducing salaries rather than cutting staff.

Bob Chapman, Barry-Wehmiller's chair and chief executive, has argued for the importance of empathetic management in contrast to what he described earlier this year as a more typical trend: "Traditional leadership or management conditions us to view people as functions, to get them to do what we want so we can be successful, not because we care about them."

For Sir Cary Cooper, professor of organisational psychology at Alliance Manchester Business School and co-founder of the National Forum for Health and Wellbeing at Work, the most effective measures to boost employee wellbeing would be to give equal weight to "people skills" and emotional intelligence alongside technical skills when recruiting or promoting line managers.

He also says employers should appoint a non-executive director and a senior executive responsible for health and wellbeing; and to introduce regular surveys and reporting to measure the effects on the workforce.

Even for companies such as Nomura that have the resources and commitment to wellbeing, identifying the right policies and overcoming external pressures beyond their control remain significant constraints.

Nomura's Edwards points out that even while remote and hybrid working has simplified efforts to train its line managers, it has reduced the benefits of human contact in the office. "It is giving people more flexibility but they are not getting the health benefit from it yet."

And however much the bank does to support staff, it has limited ability to influence external factors that weigh on staff wellbeing. "You think employees are healthier and then you get Brexit or the war in Ukraine and it totally changes the playing field."

Book review

Lifting the lid on Delaware — corporate America's tax haven

Hal Weitzman highlights the state's 'loophole' and other ways it raises money from companies registered there. By **Alan Livsey**

Most Americans know two things about the US state of Delaware. It is President Joe Biden's home and the state has something to do with how businesses are run.

But, as Hal Weitzman points out in his entertaining exploration of its history, *What's the Matter with Delaware?*, those living outside America's First State (to ratify the constitution) probably believe its laws have nothing to do with them. Reading this book will disabuse them. The state — a tax-sheltered, legal home to more than 1mn companies — matters not just in the US but to enterprises worldwide keen to draw a veil around their workings.

Weitzman, a former Financial Times journalist, breathes life into this dry topic. Early on, he reveals the frustrations of former US Treasury and Secret Service official John Cassara. For years he struggled to explain to foreign law enforcement counterparts why he could access so little information about Delaware-registered corporations. After all, in 1986 the US was the first nation to criminalise money laundering. Not that Delaware has done anything illegal. It has the backing of the US Constitution, which left the power to charter corporations in states' hands. Others such as Nevada also compete in this arena, but Delaware had first-mover advantage using a low-fee, high-volume business model.

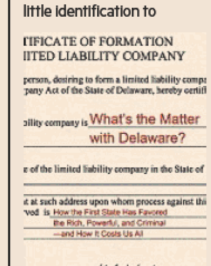
Of the more than 2,000 books that Amazon lists on Delaware history, this one must make unpleasant reading for its state leaders. Weitzman does devote a fair portion to the history of the state, maybe a bit too much.

Two chapters mid-book offer context on its co-operative governance, known as the Delaware Way. They also include disturbing reports about race riots and lynchings. But neighbouring civil war Union states with unpleasant pasts, such as Maryland, will have similar stories. Instead, see this book as a business case study of the "Delaware loophole", whereby companies can legally pay very low taxes in this tiny state, while reducing taxable income in their home states.

State corporate tax as a share of total revenue has dwindled since 1980, down by about half to 2.5 per cent. Delaware itself earned only $245mn of corporate income tax in 2020. What pays the bills really is the franchise tax, a flat fee (usually $300) to register a corporation there. That fee brought in $1.6bn that year.

Experts in the tax field will know about Delaware. Less understood are the other ways it raises money. A section about unclaimed property may surprise readers. As an example, any retailer that has incorporated its gift card business in Delaware will have unspent balances on these cards. If the card has an expiration date, the state has the right to claim the cash, creating a nice little earner. Escheatment, as it's known, generated Delaware's third-largest source of funds, $444mn, in 2020. Understandably this, as well as losing out on tax revenues to Delaware, rankles with some companies and states.

The state is mindful that if too many of its customers grow unhappy they can register elsewhere. Having usurped New Jersey, the early leader in corporate registrations back in 1913, Delaware fought off new entrants over the years. An efficient, low-cost registration system has developed, which requires little identification to incorporate an enterprise or partnership — less than to retrieve a parcel from the UK's Royal Mail.



'What's the Matter with Delaware? How the First State Has Favored the Rich, Powerful and Criminal — and How It Costs Us All' by Hal Weitzman
Princeton, $27.95/£22

An important ancillary income for Delaware capital Wilmington is via its legal system. Bankruptcies round out the life cycle of Delaware companies, after registrations and mergers. The state leads the way on bankruptcy law, ensuring plenty of lawyers and journalists bring in money to the capital's hotels, not to mention Delaware's lawyers.

Weitzman ties all this together in an easy-going style with good anecdotes that leaven the narrative. And he pulls no punches about Biden's long links to the Delaware corporate machine, asking uncomfortable questions of a liberal leader of the Democratic party loathed by America's right wing.

The writer is FT Lex research editor

FEATURES

The Henry Mance Interview

‘I do wish our students were more resilient about nasty remarks’

LOUISE RICHARDSON

Before she steps down this month, the vice-chancellor of Oxford university talks about cancel culture, state schools and why universities should not be businesses



Charlie Bibby/FT

Britons have a love-hate relationship with Oxford university. It designed a Covid-19 vaccine, yet oozes academic feuds. It represents aspiration, yet the left see it as elitist and the right as woke. Its attempts to portray itself as a modern university — which needs more public support — jar with the medieval architecture and formal dinners.

Of the 13 postwar prime ministers who undertook higher education, only one did not go to Oxford. Yet Oxford's academics, who often lead the world, receive potshots from politicians, who usually do not.

Dame Louise Richardson has faced all of this with a direct style that some colleagues find no-nonsense, others find abrasive. When she steps down as vice-chancellor this month, she can claim to leave the university on a high. "We have exploded the myth that Oxford can't change," she says, seated in her imposing, impersonal office in the city centre.

Oxford has been named the world's top university by Times Higher Education in each of Richardson's seven years in charge. The vice-chancellor, whose academic influence is limited, can't take credit for that. But she has overseen a financial reset. Faced with a public funding squeeze, Oxford took advantage of low interest rates in 2017, raising £750mn in 100-year bonds, yielding 2.54 per cent. It has also received its "largest gift since the Renaissance" — £185mn from private equity billionaire Stephen Schwarzman — and created a new graduate college with £80mn from the Reuben brothers. It has also struck a £4bn property deal with Legal & General.

> ‘I regret the tendency to equate the value of an education with the size of the [graduate's] salary’

Meanwhile, state-school pupils now make up two-thirds of Oxford's undergraduate admissions, and ethnic minority students make up one-quarter. But controversy is never far away. Undergraduate applications to Oxford have increased by about a quarter since 2016, while the number accepted has remained around 3,300 a year. Private schools complain they are losing out.

Should wealthy parents now choose state schools, if they want the best chance of their children getting in? "The vast majority of people don't have that choice . . . My advice to parents is just to get the best education they can for their children, and to encourage their passion for their subject. And if they get into Oxford or Cambridge, that's wonderful, but there are many other great universities in the country." So parents shouldn't opt for state schools? "Having been state educated myself my entire career, I did send my children to private schools because I wanted them to have the best education they could get."

Before becoming an administrator, Richardson was a researcher on terrorism. Does her resilience come from exposure to the worst of humanity? "Oh no, it comes from my childhood, one of seven kids in a rough-and-tumble place." She grew up in rural Ireland, and wrote that, after the Bloody Sunday massacre, she'd have joined the IRA "in a heartbeat" if they'd have allowed her. She later changed her mind on violence, but still felt that the academic depiction of terrorists "as one-dimensional bad guys was so oversimplified that it couldn't be right".

Her 2006 book *What Terrorists Want* argued that George W Bush's war on terror was "doomed to failure", likening it to using "a tank to catch a field mouse". She argued the US should have flooded the Middle East with documentaries about Muslims who died on 9/11, and demanded that the Taliban hand Osama bin Laden to an international tribunal. Would today's geopolitics — including tensions between the US, Russia and China — be very different if the reaction to 9/11 had been smarter? "There's so many hypotheticals there, you couldn't possibly carry that out."

In 2009 Richardson became the first female principal at the University of St Andrews. She arrived at Oxford in January 2016, the first female vice-chancellor, warning soon after that the university faced "slow but definite decline" if it didn't centralise back-office functions of departments and colleges. She managed to implement only limited changes. "There's no doubt that we are administratively deeply inefficient, and that is a financial drag. But it's a price our academics and colleges want to pay for their own autonomy." Leadership is part patience, part impotence. "You ask academics to do something, they say: 'Why?'"

She once said that she was "embarrassed" that Oxford had educated the Brexit supporter Michael Gove. Why have so many British prime ministers, including Liz Truss and Rishi Sunak, gone to Oxford? "There's an element of self-selection. We attract ambitious students with an interest in public life." Once they arrive, their skills are honed by the tutorial system and debating societies like the Oxford Union. Critics say that Oxford's culture promotes bluffing over substance. Do would-be leaders get a serious education? "One can't generalise."

At St Andrews, Richardson was unable to join the local male-only golf club. At Oxford, she feared being shut out by her Irish nationality: before the EU referendum, she applied for British citizenship. Yet Brexit has so far brought less change than expected. "We haven't seen the mass movement of academics away from Oxford . . . We have seen a very significant drop in EU students [from 8 per cent to 4 per cent of undergraduate admissions]. Research funding is the area we've always been most worried about, and that remains a really deep concern.

"Twenty years from now, we'll look back and see the results of this gradual erosion of our links with European research. Even though the impact hasn't been as great or as fast as I anticipated, I see it as entirely negative for us."

US rivals offer more funded research posts and higher salaries: in Richardson's time, Oxford has poached academics from Yale and Cornell, but not Harvard. Her own pay, £459,000 a year, has been criticised. Is it sustainable for administrators' pay to increase, while lecturers are striking over pensions? "I would really love to avoid talking about that," she sighs.

Politicians frame universities as economic drivers. Should British universities be educating fewer humanities students and more scientists? "I really regret the tendency to equate the value of an education with the size of the salary of the graduate. Our medics will figure out how to lengthen our lives, but it's the humanities that will make those longer lives worth living."

She rejects the idea of universities as businesses. "We lose money on every student we admit, and we lose money on almost every research tranche we take . . . The language of customers has no place in a university." Tuition fees paid by British undergraduates represent less than 5 per cent of the central university's income; they cover less than half the cost of those students' education.

> ‘We lose money on every student we admit, and on almost every research tranche we take’

Is this sustainable? "The question is, will we continue to have some of the best universities in the world in this country? That's an open question . . . The basic model of not adequately funding research or teaching is really a problem. And a very burdensome regulation that has no discernible impact on improving what we do."

Oxford depends on commercial partnerships and philanthropy. Richardson helped to negotiate with AstraZeneca the distribution of Oxford's Covid vaccine. Since AstraZeneca declared the end of the pandemic a year ago, Oxford has received some royalties from vaccine sales in wealthy countries. Are the royalties significant? "Not really, no." In its first year, the Oxford vaccine saved an estimated 6.3mn lives worldwide. "What's interesting is that I don't think any company would ever again do what AstraZeneca did, because they didn't get any credit whatsoever. I've been deeply disappointed in that. We could have done a deal with them where they charged ten times what they charged, and I don't think it would have sold very differently."

She has warned against the "cancellation" of benefactors, whether the colonialist Cecil Rhodes or the opioid-seller Mortimer Sackler. Oxford has not renamed its Sackler library. Is that because of a contract or a decision? "I honestly don't know. It hasn't been discussed." Why not? "Pick a building!" We are sitting in the Clarendon building. "The Earl of Clarendon! What did he do?! Are we going to go rifling through his life, and say oops we didn't like something he did?" This somehow fails to engage with how recent the devastation caused by Sackler is, or the fact that Imperial College London, the Tate gallery group and others have removed the family name.

Richardson wants more free speech. "I worry that academics will be afraid to take public positions because they just don't want to submit themselves to the pillory that is social media . . . I do wish our students were more resilient about not feeling undone by nasty remarks thrown at them."

At Oxford, Richardson, 64, has been apart from her husband, a doctor in Massachusetts. They have seen each other every month, less in the pandemic: "not optimal". Her advice to others in similar situations? "Make the most of it . . . [When together]." Her next job is in the US, at the Carnegie Corporation of New York.

Halfway through the interview, Richardson seems exasperated at the breadth of my questions. "This is not going the way I was expecting at all, I have to tell you!" When our time is up, she expresses bewilderment at what I'll make of her remarks. But after seven years, she surely knows how much of national life Oxford touches — how many of our collective insecurities it must bear.

On the spot

- **Will there be a united Ireland in your lifetime?** No.
- **Is it easier to be Irish in Britain or in the US?** Much easier in the US.
- **Was George W Bush a worse president than Donald Trump?** No, I don't think there's a worse president than Trump.

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ARTS

A niche for audiobooks with ear appeal

The market is dominated by Audible, but Kate Bland is hoping her new company, Spiracle, will be a prime platform for literary fiction. By Harriet Fitch Little



Spiracle co-founder Kate Bland, photographed for the Financial Times by Alastair Levy

Kate Bland has described Spiracle as a "bookshop" so many times that people sometimes get confused and think she's talking about a real place. In fact, the company operates from a basement office in north London and its product is digital: an audiobook subscription platform with an emphasis on indie titles.

Spiracle, which launched as a web app earlier this year, wants to act like an old-fashioned bookseller for audiobooks, the sort you might trust to sell you something unheard of and unusual. "There is an audience who want really good quality selected material," Bland says when we sit down to talk in the recording studio, coffees perched carefully among the microphones. (Spiracle does not create the audiobooks itself but subcontracts production.)

For £12 a month (or £120 a year), users can choose two audiobooks from a list of six to 12 titles. The selection refreshes every month and is bolstered by podcasts, newsletters and author interviews introducing the books and the themes that bind them. Other titles are available to buy as one-off purchases but the selection is slim: a catalogue of 500 rather than the infinite scroll of Audible, Amazon's market-leading audiobook platform.

What became Spiracle began as a 2019 collaboration between Bland and co-founder Leigh Wilson, a University of Westminster literature professor interested in contemporary small-press publishing. Bland, who runs the audio production company Cast Iron Radio, joined with Wilson to raise funds to subsidise the production of audiobooks too niche to be courted by the big players. Working with Fitzcarraldo Editions they recorded Claire-Louise Bennett's *Pond* and Olga Tokarczuk's *Drive Your Plow Over the Bones of the Dead*. "I think publishers were beginning to think, 'Well, we're crazy if we're not making audiobooks,'" says Bland. Industry growth has been immense.

In the UK, audiobook income rose 71 per cent between 2019 and 2021 compared to 6 per cent for consumer print (albeit it's still one-tenth the level of print). Spotify is rolling out a competitor to Audible; it launched in the US in September with a library of around 300,000 titles.

But Bland and Wilson soon realised that getting audiobooks made was only half the challenge. Literary fiction was not well suited to algorithm-governed platforms where genre fiction dominated and audiobooks were often left unfinished, treated less as books than as podcasts that wouldn't run out on a long car journey. "With digital stuff, if you don't want it you can have a bit of it and decide not to and move on," says Bland. "That might be the consequence of having a sort of deluge."

The two decided to build an audiobook subscription service that would do better by readers and small publishers. Neither had a "hardcore" digital background, Bland says, so they found a third co-founder with tech expertise, Jon Wilkinson, who led development of the audio player.

This was helped by £70,000 in funding from Arts Council England but the founders have also paid in considerably; Bland estimates that software and design development alone has cost £200,000 to date. They are now seeking private investment for the first time. "We have to grow pretty quick," says Bland. She points out that the less-but-better model has worked for film companies competing with the digital content giants.

She is not daunted by the entrepreneurial turn her life has taken. "It feels to me as if everything is breaking open and the corporate style of doing things has left people quite miserable," she says. Anecdotally, she says many friends in their fifties are turning away from "soldierlike" salaried jobs in the pursuit of something a bit more interesting, even if it means they live on less. "I have a bit more courage because we have to do something to stop everything feeling the same and being run by the four horsemen of the internet."

Bland agrees with many principles of what makes a good audiobook: strong voice, gripping narrative. One of the first books Spiracle promoted heavily was Graeme Macrae Burnet's *His Bloody Project* — a murderous thriller, yes, but one that was shortlisted for the Man Booker Prize.

Central to Spiracle is the thought that challenging books work well in audio too. Every month the team co-publishes an audiobook with an independent publisher that would otherwise struggle to do so and promotes it heavily. In November it was poet Joseph Fasano's debut novel *The Dark Heart of Every Wild Thing*, a parable about a man's pursuit of a mountain lion from Platypus Press. This month it's *The Mariner* from Banipal Books, a translation of Taleb Alrefai's Kuwaiti history novel. These are chewy books designed for long walks rather than distracted commutes. "With Spiracle, the effect is to say, 'Persevere, because this has got something,'" says Bland.

For small presses, having a company that's willing to pull niche titles from their back catalogue and turn them into audiobooks makes a daunting process seem easy. "There are barriers to entry," says Sam Jordison, who co-founded publishing house Galley Beggar Press and has published two audiobooks with Spiracle: Alex Pheby's *Playthings* and James Clammer's *Insignificance*. The rough cost of producing an hour of finished audio is £250 and that doesn't include paying the narrator. Given many literary novels sell hundreds of print copies, it's not feasible for publishers to go DIY, and big production outfits aren't interested.

While publishers are grateful for Spiracle, it won't be right for every book. It is what Jordinson describes, without malice, as a "walled garden". Publishers convinced they are sitting on a surprise bestseller are unlikely to want to cordon it off to a subscriber base that still numbers in the hundreds.

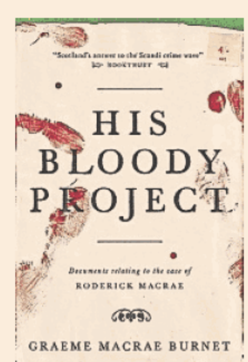
Tamara Sampey-Jawad, associate publisher of Fitzcarraldo Editions, says the best future for independent publishers is a diverse marketplace. "If you've only got one thing, then that's never really good for the literary landscape," she says. "Hopefully all these new platforms that are coming up are going to mean that we'll see more variety in the types of audiobooks being produced."

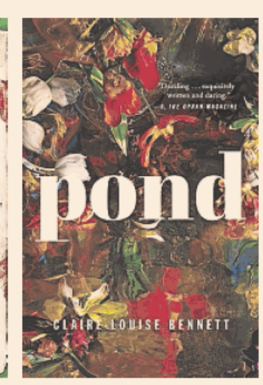
> 'I think publishers were beginning to think, "Well, we're crazy if we're not making audiobooks"'

For Spiracle, the challenge now is to convince enough readers (or listeners, no one is quite sure what to call them) that its founders' taste is worth investing in. People who love books mostly love *books* — their smell, the crack of the spine, the understated but sophisticated covers that indie presses seem to excel in.

Not much of this culture translates to audio. Instead, Spiracle will have to rely on the strength of the stories and "marketing, marketing, marketing", says Bland. After all, she points out, despite all the bookshop analogies, "nobody is going to walk past you and think, 'What a nice shop window!'"

spiracleaudiobooks.com





Two of the books Spiracle has turned into audio content



Substandard smut makes superior listening

PODCASTS
Fiona Sturges



"All bad porn must come to an end," says Jamie Morton in the penultimate episode of *My Dad Wrote a Porno*, the podcast built around his father's late-blooming career as a writer of substandard smut. The hit series, which launched in 2015, has been downloaded 430mn times and spent much of its existence near the top of the podcast charts.

During this time, the formula has remained unchanged: in each episode, Morton reads out extracts of his dad's erotica, self-published under the nom de plume Rocky Flintstone, charting the adventures of Belinda Blumenthal, a travelling pots and pans saleswoman who has a lot of sex in a lot of unusual places (highlight: in a garden maze while handcuffed to a trellis). As Morton reads, his two best friends, former Radio 1 presenter Alice Levine and writer and producer James Cooper, provide gleefully horrified commentary.

In the series' final throes of ecstasy, there is still comedy gold in Flintstone's mangled prose and in his tenuous grasp of human anatomy. The last two episodes yield a marriage proposal, a period of reflection around a campfire and an X-rated farewell dinner during which "goosepimples flooded [Belinda's] skin like a non-contagious type of chickenpox" and her genitals began "whistling like a kettle". As ever, practical questions abound: how exactly do genitals whistle? And can a woman really be hit in the eye by her breasts?

Much has changed since the series was launched — media giants including Amazon, Spotify and the BBC have muscled in on the podcasting game and the market is impossibly crowded. Would *My Dad Wrote a Porno* have the same impact were it launched today? Possibly not. Nonetheless, Morton, Levine and Cooper have shown the value of building a listening community — Elijah Wood, Michael Sheen and Emma Thompson are among the celebrity listeners to have appeared on their bonus "Footnotes" episodes.

They have also provided a lesson in how to turn a simple idea into a money-spinning juggernaut, taking in not only podcasts but books, live shows (they have played London's Royal Albert Hall and Sydney Opera House) and an HBO TV special. Their series has shown us that it is not only true-crime podcasts that go stratospheric; done right, comedy is similarly a force to be reckoned with.

At the core of the series, besides the obvious filth, is the chemistry of the three presenters and the affection, rather than disdain, with which they poke fun at Morton's father. Next week, the series will sign off with a bonus episode featuring a conversation with Rocky Flintstone himself — it will be the first time anyone has heard him speak. But for now, the trio sign off by thanking the "loyal gang of perverts" who have made *My Dad Wrote a Porno* what it is: a dirty little secret beloved by millions.

play.acast.com



From left: Jamie Morton, Alice Levine and James Cooper in the HBO special of 'My Dad Wrote a Porno' Liam Daniel/HBO

FT BIG READ. WORK-LIFE BALANCE

A UK trial to determine whether it's possible to do a week's work in fewer hours is drawing to a close after six months. Employers and employees at four companies who took part share what they learnt.

By Emma Jacobs



Making a four-day week work

Five years ago, Wyatt Watts arrived for his first day of work at Platten's in Wells-next-the-Sea in Norfolk, eastern England. "It felt like a challenge," he reflects, dealing with the "fast pace" of a fish-and-chip shop packed with hungry day-trippers.

On a sunny morning this summer, Watts, now a team leader, was preparing for a new test. The 26-year-old was worried his work was about to become more intense and stressful. Yet he was determined to make it a success.

For if he could squeeze his 40-hour week into just 32 hours — cleaning the stainless steel kitchen, preparing mushy peas and the batter, while fulfilling his management responsibilities — he would receive full pay and more free time.

Platten's is one of 70 companies, encompassing 3,300 employees, who signed up to the UK trial of the four-day week, running from June to December 6. It is spearheaded by 4 Day Week Global, a non-profit organisation founded by Andrew Barnes, a New Zealand entrepreneur who implemented a four-day week in his own financial services company, Perpetual Guardian, after a trial in 2018.

Researchers at Cambridge university, Boston College and Oxford university will measure the impact of a shorter week on productivity and wellbeing. Parallel pilots running in Ireland and the US, comprising 33 companies and 903 employees, show signs of promise.

A report by 4 Day Week Global found that "physical and mental health . . . work-life balance and satisfaction increased". While revenues rose about 8 per cent over the trial, "absenteeism was reduced and resignations declined slightly".

Interest in the four-day week has been gathering momentum. Last year, Unilever's New Zealand operations switched to four days, recently extending it to Australia. In the UK, Atom Bank last year introduced a 34-hour week. While in Belgium, workers won the right to compress five days into four.

The trial was forged in the aftermath of the pandemic, which forced largely white-collar workers to retreat to their homes and ripped up the nine-to-five office routine. Other experiments include a seven-day flexible week by Arup, the engineering company, and Airbnb's work-from-anywhere policy.

Joe O'Connor, chief executive of 4 Day Week Global, says: "This was something which, pre-pandemic, was a growing niche [but] still very much a fringe concept . . . The impact of the pandemic has turbocharged the four-day week movement."

Yet since the trial started, the economy has deteriorated. Many wonder whether employers will row back on flexible working policies implemented in the pandemic. Snap, the tech company that earlier this year announced lay-offs, recently asked employees to come to the office four days a week.

Advocates for the four-day week point out that, unlike a season or a day, there is nothing natural about the working week. The two-day weekend — dispensing with working on Saturday morning — did not take off in the UK until after the second world war, quashing arguments that too much leisure time could spur political activism among the working classes.

If the trial prompts widespread take-up of a four-day week, advocates say wider societal benefits could include increased gender equality, improved wellbeing, as well as a reduction in workers' carbon footprints. Detractors fear a loss of output, as well as burnout, erosion of workplace culture or the uptake of second jobs.

A series of interviews with employers and employees at four companies across sectors from fast food to financial services at the start and towards the end of the trial's span offers an inside view of the complexities of pulling off a significant organisational shift.

Prep for success

In a large meeting room with exposed brick walls, Shaun Rutland, chief executive at east London-based games designer Hutch, talks about his motives.

"Coming out of the pandemic, people are quite burnt out," he says. "We had quite a few people leave." Some re-evaluated their purpose in life and changed careers, including becoming teachers.

Hutch needed to think how to retain and recruit staff when competitors were increasingly offering fully remote work. For Rutland, the four-day week arrived as an epiphany when a consultant friend mused that, in 10 years, it could be the norm. "I was like: 'Oh, really?'" he says.

The risks were not only a decline in output but that the intensity of working fewer days might offset any gains from having an extra day off.

Brendan Burchell, professor of social sciences at Cambridge university and one of the trial's observers, says: "We know that one of the things that's particularly bad for people's mental health in organisations is constant time pressure, always having to work to tight deadlines . . . at high speed."

'Before [Covid-19] this was still very much a fringe concept . . . the impact of the pandemic has turbo-charged the four-day week movement'

A drive for efficiency might also mean less socialising at work, diminishing morale, preventing knowledge from being shared and harming organisational culture.

The planning period for a four-day week, says O'Connor, "determines the success or failure". It requires input from workers at all levels of the company, he says, because even "the most detail-oriented CEO in the world does not know the day-to-day intricacies of each of their employees' jobs".

At Hutch, leaders answered and publicly shared the answers to more than 140 anonymous questions and ran Q&A sessions with each team. Senior leadership likes to joke it took six months of six-day weeks to transition to four days.

Stellar Asset Management, a London-based financial services company, gave the challenge to its Leadership Development Programme, comprising a group of junior employees. They worked through the practicalities in advance and set out how to measure the effects through surveys on productivity and performance.

The companies each planned for handovers between staff, introduced sickness tracking data and refresher training for managers to set goals, and sought ways to increase efficiency through technology. Stellar introduced a database management tool and a new client portal to streamline communication. David Stein, Stellar's investment manager, says the process has been a spur to "interrogating how you were working".

'It has shaken the business up . . . There is a certain cost to it but the benefits outweigh the costs'

Employees were encouraged to better plan their diaries and schedule shorter meetings, or only participate for parts to claw back time. Andy Bass, art director at Hutch, says he halved his weekly meetings to 10 hours, sometimes listening to recordings while doing admin.

For two hours every Wednesday, Hutch employees focus on so-called deep work, uninterrupted by meetings or calls. The company also created a dedicated quiet area.



There was also task reallocation. In Hutch's art studio, jobs were given to the most suitable artists. The downside was that artists were not stretching themselves with projects that were outside their comfort zone, a particular issue for junior employees. "We don't have that luxury now," says Bass. "Because we need to hit our deadlines." It did lead to providing additional training.

At Platten's, the fish and chip shop, staff were handed cards at the start of their shifts setting out priority tasks so that they could hit the ground running.

There was initial "scepticism" when Platten's asked staff to keep a daily diary to gauge the productivity baseline for a standard working week and find efficiencies, says owner Luke Platten. Some employees resented the scrutiny of their working day, causing one to quit. "Building a culture of trust and being really open and honest . . . is something that just takes time and a lot of reassurance," Platten adds.

The fourth business the Financial Times spoke to, Southampton-based Yo Telecoms, did not ultimately proceed with the four-day-week trial after finding difficulties in measuring performance for some departments, notably marketing. Extra engineers would also have been needed to cover staffing gaps.

When it transpired that a sizeable minority believed they were simply getting an extra day off without having to boost productivity on the other four days, it "raised alarm bells", says Nathan Hanslip, the chief executive. He says he will reassess when the economy improves.

Productivity pains

"The acid test," says Jon Boys, labour economist at the Chartered Institute of Personnel and Development, is whether companies can "boost productivity by 25 per cent" on the days they do work. "That is a whopper."

Some departments, such as sales, found it relatively easy to measure productivity, but others found it far harder. It was also tricky to distinguish the impact of the four-day week from the world coming out of lockdowns.

Charmaine Clavier-St John, head of people at Hutch, says at first they measured too much, adding to the workload, so scaled back. The "sprint velocity", a way of measuring productivity in their games department, remained steady.

Platten's found it impractical to measure the speed of cooking or service, and was reluctant to use revenues as an indicator of success due to changes in the business. Instead, it focused on a number of indicators. Unauthorised absence, one sign of stress, fell "through the floor", says Platten, noting a 74 per cent increase in staff retention and seasonal workers wanting to return. Participation in voluntary training hit 94 per cent.

Daryl Hine, chief operating officer at Stellar Asset Management, focused on outcomes, such as delivering projects or reports by key dates, sales teams hitting targets, or investment teams doing deals, and is satisfied "we are achieving the same amount in fewer hours".

Platten's found a flexible approach worked best. In peak tourist season, for example, it paused the 32-hour week. But, because of efficiencies the company had introduced, Watts says the hours didn't seem as long. "I still felt like I had free time." In September, they returned to 32 hours, and in winter switched to 24 as compensation — on full salary.

At Stellar, two employees said they preferred the pace of a five-day week,



and many would take important calls or Zoom meetings on their day off. Hutch found 43 per cent worked above their contracted hours, though 71 per cent only added two hours.

One difficulty for all knowledge workers was distinguishing between leisure and work. Was golf with a client fun or duty? Some said they saw the time off as an opportunity to study for professional qualifications or attend public speaking classes.

Hutch's Rutland describes the experience as "at times challenging and tough", intensifying the pace of work and forcing him to make decisions more quickly. He wonders if his increased presence at home in the working week has made his kids miss him more on work trips. "I don't know if that's connected to the four-day week, but I had wondered if it's because I'm more there for them on the weekends."

In the context of the cost of living crisis, another risk is that employees will take on a second job. Platten is worried how this would interfere with wellbeing, but is nervous about crossing the line into workers' private lives. "It is such a fine balance," he says.

Brave new world of work: Charmaine Clavier-St John of Hutch. Below, Daryl Hine, left, and David Stein of Stellar Asset Management. Below left, Nathan Hanslip of Yo Telecom. Photographs taken for the FT by Charlie Bibby

'Building a culture of trust and being really open and honest . . . is something that just takes time and a lot of reassurance'

The 4 Day Week trial will not publish its findings until February next year. But three of the four companies the FT spoke to plan to stick with it.

Stellar Asset Management's Hine says it has made a "massive difference" in terms of attracting hires and retaining staff. What was initially branded as a "gift day" will now become a "flexible working day", which it hopes will eliminate any paternalistic connotations of it seeming like a reward.

Rutland at Hutch says the experience has been "really energising" and plans to hold productivity boot camps every six months. "It's shaken the business up," he says. "There is a certain cost to it, but the benefits . . . definitely outweigh the costs."

The future of work

Will the trial convince other employers to follow? Even among those enthusiastic about the results, there are concerns that once this becomes a standard work pattern, some of the efficiencies will be lost.

More broadly, as employers and employees grapple with high inflation and energy bills, the focus will turn to job preservation rather than perks.

According to the CIPD, only 1 per cent of employers anticipate cutting hours on the same pay over the next three years. Of those that have already reduced hours, about 30 per cent said they did not achieve the "same volume of work [or] output as before".

Recent data from LinkedIn found that 28 per cent of employers anticipate reducing flexible working and hybrid working roles.

For many workers, shortening the working week is also less of a priority than having flexible or predictable hours. The Living Wage group, which accredits employers who pay a salary covering living costs, earlier this year launched liveable hours, guaranteeing predictable shifts, amounting to at least 16 hours a week.

Some simply want to be able to work enough hours to get by. While some white-collar workers are happy to reduce working hours even if it reduced salary, according to the Social Market Foundation think-tank, "by contrast, care and hospitality staff are among those who would rather work for longer than they currently do".

Burchell at Cambridge sees the pilots not as scientific experiments but as a pathway to an alternative way of working. "People often talk about the five-day week [as] if it's something that was in the Book of Genesis. That's very far from the truth," he says. "Some of [the] arguments against the four-day week are going to prove to be spurious. If there's a will to go in that direction, people can make it happen."

The FT View

FINANCIAL TIMES
'Without fear and without favour'

ft.com/opinion

Anwar's ascent in Malaysia

Premier's capacity for political survival does not diminish the size of his task

Anwar Ibrahim's arrival as Malaysia's prime minister caps one of the world's most extraordinary political journeys. It also brings a crucial chance for the south-east Asian country to heal social and political divisions while recovering its credibility on the world stage.

Anwar, 75, was widely seen as a future leader as long ago as 1997 when, as deputy prime minister, he helped steer Malaysia through the Asian financial crisis. But after he was sacked in 1998 by his mentor-turned-nemesis Mahathir Mohamad, Anwar was jailed on trumped-up charges of sodomy and corruption. After that conviction was overturned in 2004 and Anwar returned as an opposition leader, his political ambitions were truncated by a second sentence for sodomy in 2015. He then ran, from prison, in the 2018 election, rejoining Mahathir in a victorious new coalition. A royal pardon allowed him to resume political life.

Such vicissitudes speak to Anwar's capacity for political survival. But they do not lessen the huge task he faces after a divisive election that returned Malaysia's first hung parliament.

One of Anwar's biggest assignments is to restore Malaysia's reputation following a long-running corruption scandal that led to the sentencing this year of former prime minister Najib Razak to 12 years in prison. Najib was found guilty in 2020 of breach of trust, abuse of power and money laundering related to 1MDB, a state fund. A US attorney-general once described the embezzlement of billions of dollars from 1MDB as "kleptocracy at its worst".

Anwar, who has also taken on the job of finance minister, has rightly pledged to fight corruption. He has, meanwhile, shown solidarity with many Malaysians struggling with rising living costs by saying he will take no salary. His promise to reinvigorate growth and tackle inflation has helped boost local market sentiment.

Yet Anwar's most delicate balancing act is set to be political. His coalition, Pakatan Harapan (Alliance of Hope), won the most seats but fell short of a majority. That has led to an uneasy power-sharing arrangement, with a portion of his cabinet composed of members of opposition parties, including the former governing Barisan Nasional.

The BN's worst ever performance in the latest election, in part because of the 1MDB scandal, was an emphatic rejection by voters of a coalition that had dominated Malaysia's politics since independence in 1957. Anwar's naming of the BN leader Ahmad Zahid Hamidi, who faces graft charges, as a deputy prime minister will not go down well with his voters.

Striking a balance in representation for Malaysia's indigenous Malay majority and its ethnic Chinese and ethnic Indian minorities will also be crucial. Anwar, a Malay Muslim, is well aware that one of the reasons for the collapse of a previous governing coalition led by his party was losing the confidence of the Malays.

> Striking a balance in representation for the country's indigenous Malay majority and its ethnic Chinese and ethnic Indian minorities will be crucial

Should Anwar be seen to fail, Malaysia could find itself at the mercy of unsettling political trends. The opposition Perikatan Nasional is dominated by an Islamist party that enjoyed explosive success in the latest election. Malay voters seemed undeterred by the party's enforcement of conservative laws in the states it controls. If reform stalls and sleaze persists, it stands a good chance of winning power at the next election.

In foreign policy, the new prime minister will again require balancing skills. Anwar should try to recalibrate the tilt towards China that characterised Najib's leadership and foster stronger US and European ties. He could find an example in neighbouring Singapore, south-east Asia's expert at balancing rival interests.

Opinion Investing

Fomo is the new greed of market psychology

Maria Hergueta



Leo Lewis



If investors insist on trying to time their moves in stock markets, said Warren Buffett almost 20 years ago, they should be fearful when others are greedy, and greedy only when others are fearful.

It is good contrarian stuff. And the time-honoured depiction of markets in the permanent push-pull grip of these two animal spirits has an enduring appeal because (nuance and caveats aside) it does actually explain a lot of market psychology quite neatly. The difficulty arises, as now, when greed and fear start defining themselves as the same thing.

In the parsing of the FTX collapse — and a string of other recent debacles that seem ominously comparable as phenomena of the loose money era — fear of missing out, or Fomo, has repeatedly emerged as the critical ingredient in the investment build-up before the fall.

Fear, in this usage of the word and in the context of the FTX and wider crypto run-up, was creating something that looked an awful lot like irrational exuberance. This exuberance, in turn, was fuelling something that behaved from a market standpoint an awful lot like greed does during its periodic stints at the wheel.

> With tech and crypto fears in limbo, a larger version now sits on the horizon in China

As the Fomo narrative has it, investment money (much of it under the auspices of large, seemingly respectable funds) thunders collectively into particular assets (in many cases, with minimal due diligence) not because it necessarily believes in the underlying opportunity but because the rewards are presented as unmissable and the consequences of delay or scepticism are somehow scary.

The idea is not novel, even if the acronym is. Similar thought processes have featured before in earlier crises. In 2007, Citi's Chuck Prince famously stressed the need to keep dancing as long as the music was playing: a freely chosen indulgence presented as an unquestionable obligation.

So is the current version of Fomo just greed in disguise? It is tempting to think so or, at the very least, conclude that the word "fear" here describes a more discretionary and easily surmountable dread than, say, the fear of loss, value destruction or worse.

The casting of Fomo as a genuine fear demands evidence that there is some price to be paid for missing out (of the sort shops experience, for example, during panic-buying prompted by public alarm). Self-recrimination for a bonanza skipped, or the wrath of a dissatisfied investor, do not quite count.

During the past half decade of tech-centric investment, however, Masayoshi Son's SoftBank has led the way in instilling a more legitimate set of Fomo concerns for certain investors. When the first of his Vision Funds launched in 2017, the $100bn vehicle was explicitly designed to create a new genre of tech investment.

It did this (or planned to) by using its scale not just to identify potential winners but to shower them with enough funding to ensure that, on metrics such as market share, they probably would be.

This implied guarantee of dominance, however flawed, set a tone that would resonate: if investment is not about prospects but sure things, then Fomo is not greedy but wise.

With tech and crypto Fomo now in some limbo, a much larger and more complex version now sits on the horizon in China, and could dominate corporate and financial investment next year. A good number of fund managers say they are already positioning themselves for a short-term "Fomo event".

A relatively quick reopening of China or a sharp relaxation of zero-Covid rules is a change that no global or Asia-focused investor can afford to miss. The feeding frenzy could ramp up very swiftly.

But the longer-term Fomo trade relates to geopolitics, and to the way in which US and Chinese industrial policies have set themselves sufficiently at odds with one another to make some form of decoupling look more inevitable.

Behind the rhetoric of the US Chips Act and the Made in China ambitions are geopolitical shifts that could eventually oblige more and more companies — in the US, Europe, Japan, South Korea and elsewhere — to make some kind of choice between the two blocs.

In some cases, this might take the form of redesigned supply chains and other "friendshoring" investments to allow dual-track manufacturing and sales.

For others, though, there may be serious pressure to rethink being in China at all. And business leaders and their investors should perhaps consider that there may be valid reasons to miss out on the world's greatest gross domestic product growth engine.

This, truly, will put the "f" in Fomo: the question is whether the fear is strong enough for companies to push back before it happens.

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Japan's politicians play game of chicken on energy crisis

Leo Lewis's column on the increased need for Japanese to dress in turtlenecks as energy prices rise reflects the fact that the local approach has long been to heat the body, using kotatsu tables, under-desk heaters or hot water bottles tucked into fluffy futons, instead of heating homes or workplaces (Opinion, November 28).

Most buildings in Japan found south of Hokkaido lack insulation in walls and roofs, or thermal breaks and double glazing in windows. These buildings are like refrigerators — or cars from before the 1970s oil shock — wildly inefficient and consuming much more than the typical structure built in the US or EU today.

After the 2011 nuclear shutdowns, the nation could have begun building better and with greater energy efficiency.

In a country where the average lifespan of buildings is slightly more than three decades, that would have had a profound impact on how much energy — much of it imported — Japan would be using to heat its homes and workplaces this winter. But instead, politicians, in concert with the Keidanren business lobby, began the game of chicken we see playing out this winter.

They chose to leave their citizens and consumers too cold in winter and hot in summer when crises throttled energy or raised costs.

They have tilted the playing field to keep energy consumption high and support obsolete energy suppliers relying on nuclear plants.

Japan started down the path to energy efficiency in buildings — as well as developing gas-sipping cars — in the 1970s but lost its way in the bubble era, with only weak building regulations easily ignored. The knowhow is, nonetheless, seen even in Japan: in chilly Hokkaido.

It's time for the nation to stop propping up an obsolete and unwanted energy infrastructure on the backs — and necks — of its citizens.

Dana Buntrock
Professor Emerita, University of California, Berkeley, CA, US

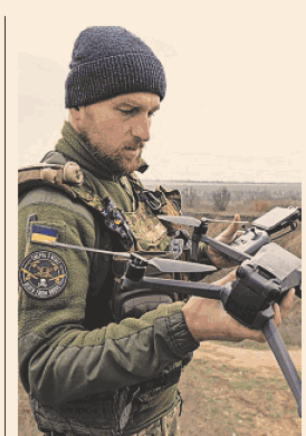
'In Europe, not run by Europe', was a Tory slogan

In his letter "Britons deserve more than bland Brexit optimism" (November 29), Richard Wright asks for the subject to be addressed in a serious and grown-up manner. That is fine as long as those who would seek to reverse the decision to leave the EU would stop conducting the debate as though the EU was no more than a free trade organisation, focusing solely on the short-term economic impact of leaving.

Brussels is determined to produce an organisation where more and more power is arrogated to the centre and away from democratically elected national governments (ever closer union, etc). The British, being free traders but keen on national democracy, have tried for 47 years to modify this objective but to no avail. Since Britain does not support the EU's main aim, it has correctly decided to leave the organisation. Nonetheless, after less than two years outside this body Europhiles are already arguing, on purely economic grounds, that leaving has been a mistake and that we should go crawling back.

Europhile Tories once had a slogan: "In Europe, not run by Europe." It seemed an admirable enough aim but proved to be a practical impossibility. The pivot away from Europe may take some time but it is still a necessity if we are not once again to be run by Europe.

John Murray
Guildford, Surrey, UK



A Ukrainian soldier holding a drone ahead of the recapture of Kherson

The dismal reality of Brexit is eroding the constitution

In response to Robert Shrimsley's "Reforming democracy may be next Brexit" (Opinion, December 1) he understates the case for root-and-branch constitutional reform by treating it as a mere question of political expediency.

The Westminster model of an unwritten constitution has been undermined by successive governments, but in the recent period the Conservatives have excelled themselves in cynically destroying the people's trust in our constitution and institutions, through the proroguing of parliament, and now the packing of the second chamber with placemen.

When government ministers can suggest repealing the Human Rights Act and denouncing the European Convention — the people's protection against overweening and arbitrary executive power — while supporting the gutter press in denouncing our judges as enemies of the people and there is absolutely nothing we, the people, can do about it under the existing constitutional arrangements, it is surely time to organise a constitutional convention to debate and draw up a written constitution with entrenched provisions.

As the dismal reality of Brexit dawns even on the Daily Express and The Telegraph, voices are being raised in favour of the UK's emulating Switzerland, joining the single market, becoming a member of European Free Trade Association or even rejoining the EU, as if such choices could be made unilaterally. While I have sympathy with these voices, I would point out that none of these options can be exercised by the UK without the support of the EU institutions and member states.

Whereas the UK still has friends in the EU, it would be madness for the EU to allow the UK to join EFTA or come back into the EU without the UK's having first engaged in constitutional reform, a Swiss arrangement being manifestly unacceptable to the EU.

Robert Bray
Former Head of the Secretariat of the European Parliament's Legal Affairs Committee, Brussels, Belgium

Drone warfare: more honoured in the breach

In your leader (FT View, November 12) you discuss the evolution of drones in combat. That they may be run by artificial intelligence in the future in massive numbers is probably a blip in time, however, due to the corresponding evolution of defensive measures against drones.

In the last paragraph you bemoan the fact that "conventions in warfare are often honoured more in the breach than the observance", referring of course to the reality that armies quickly dispense with ideas of moral obligations once they are threatened with losing.

Is this not the true human condition?

Pretending war is not the epitome of immorality is in itself a losing proposition. There are no greater liars than those who promise to uphold all military conventions, regardless of the consequences.

Jon Johannessen
Venice, CA, US

Xi is unwilling to admit defeat in vaccines battle

When China introduced the zero-Covid policy, it was clear to many this was not just a health measure, it was also a way of sweeping under the rug their defeat in the political battle for vaccines with the west (FT View, November 30).

Not willing to admit liberal democracies succeeded where the Communist party failed, Xi Jinping introduced the only measure that could prevent Covid-19 outbreaks: massive lockdowns. But this is where problems really started for China.

The Communist party became quickly addicted to zero-Covid, and there is no easy way out.

First, they ignored long-run damages: Xi seemed to forget that gross domestic product and productivity growth depend on the population's wellbeing, education and investment. Then came the illusion that short-run issues are as inevitable as they are bearable: protests will hurt the party's reputation, but they can be dealt with. Now, they will realise that the more they wait, the harder it is to quit due to the reputational costs of using the west's vaccines.

China's policies today are being constrained by yesterday's decisions, creating a vicious circle — and a point of no return might soon be passed.

Filippo Aloisi de Larderel
Rome, Italy

Cows cause climate change but it's not their fault

In a full-page ad in the FT Weekend, Lombard Odier rightly celebrated the earthworm as a hero.

But in their next ad it blames the cow ("cut out the middle cow") for deforestation, biodiversity loss and climate change and falls into the same trap as the many journalists who illustrate their articles on climate change with a picture of a cow.

In so doing they demean not only the cow, which since time immemorial has provided us with nutrient-dense food derived from otherwise indigestible cellulose and with manure that feeds the soil, but also the many people around the world who live at the margin and for whom the cow (and other ruminants) plays a vital role in their day-to-day survival.

The cow is innocent. Such damage as may be caused by their industrialisation is caused by people, by the supermarkets who sell milk as a loss leader and force farmers to intensify, by those who speculate in food commodities and by the financial institutions who finance them all.

Next time, instead of a picture of a cow perhaps we could have a picture of a supermarket chief, a speculator or a banker. Like the earthworm, a grazing ruminant is an ecosystem engineer and — like the earthworm — is innocent.

John Meadley
Stonehouse, Gloucestershire, UK

For years workplaces have been constantly evolving

Edwin Heathcote's article on "office scenes of domesticity" suggests that the post-pandemic workplace is designed to keep us all in the office for longer ("Office scenes of domesticity mask a few home truths", Special Report, November 28).

I have been working with some of the world's largest occupiers for the past 25 years, and the workplace is in fact constantly evolving.

This is true not just for architecture and design but for working practices, office culture and management styles.

While there is a move towards fewer desks and more task-led workstations being introduced, in many cases this has not impacted the overall real estate but simply makes better use of the existing space.

It's also the case that not all of us are fortunate enough to have a designated office space at home and do benefit greatly from a workplace that supports all styles of work and collaboration.

There will always be a balance between business needs and human needs, yet progressive organisations have always held conversations with their employees to ensure that their facilities captured the personality of teams and provided the resources and furniture that supported the functions they needed to create a productive work environment.

Rachel Houghton
Managing Director
Business Moves Group
Reading, Berkshire, UK

Fowler and Lady Susan's unfortunate question

Banx's cartoon (December 2) has two aristocrats suggesting that Lady Susan Hussey's unfortunate comment — "Where are you really from?" — is ungrammatical and it should have been phrased as: "Whence are you really from?" Unfortunately, the two toffs are wrong.

"Whence", as Fowler reminds us in the first edition of his *Modern English Usage*, is a more elegant (and, in his opinion in 1926, preferable) version of "where from". To add "from" to "whence" is simply tautological and, if you were to call on your inner pedant, Lady Susan should have asked: "Whence do you come?" — a sentence never uttered outside of a Wodehouse novel. We should cut Lady Susan some slack for her phrasing and save our concern for the content.

Peter Rose
New York, NY, US

Correction

- HSBC's Canadian business, which is being sold to Royal Bank of Canada, is the country's seventh-largest bank, not the sixth-largest as wrongly stated in an article on November 30.

Opinion

Easy money era is over but world leaders have not got the memo

MARKETS
Ruchir Sharma



While global investors increasingly recognise that the easy money era is over, many world leaders do not — and the markets are punishing them for free spending in the new age of tight money.

In the 2010s, when interest rates hit historic lows, markets punished very few free spenders — Greece, Turkey and Argentina, most notably — for extreme fiscal or monetary irresponsibility. Now inflation is back, rates are rising and debt levels have been elevated worldwide, investors are targeting an expanding list of countries.

The markets have forced a shift in policy, or at least tone, this year on countries ranging from the UK to Brazil, Chile, Colombia, Ghana, Egypt, Pakistan, even defiantly populist Hungary. What these countries shared was relatively high debt and widening twin deficits — government and external — combined with unorthodox policies likely to make these burdens worse. But tight money is here to stay. The target list will grow. No country is likely to be immune, even the US, which has among the highest twin deficits in the developed world.

The new mood is often described as the return of "bond market vigilantes" as if it were confined to bond investors and "market fundamentalists". But tight money is gripping all asset markets, including stocks and currencies, punishing governments of the right and left and posing a practical question about whether countries can pay their bills without easy money.

Conservative UK prime minister Liz Truss was forced out in October after markets reacted to her unfunded tax cuts by dumping the pound. Her successor scrapped her agenda. Soon after, the spending plans of leftist firebrand Luiz Inácio Lula da Silva, incoming president of Brazil, triggered a sell-off.

When Lula attributed this reaction to "speculators" not "serious people", the markets drove up Brazil's real interest rates, which were already among the world's highest. Lula's aides scrambled to dilute his comments. His fellow socialists, on the rise across Latin America, are targets too.

Colombia's first leftist president, Gustavo Petro, came in promising free higher education, a public job for every jobless person and to wean the economy off oil. Sceptical that Petro can pay for new benefits with less oil revenue, investors offloaded the peso, forcing his finance minister to assure the market that he "will not do crazy things".

> Low rates made sovereign default so rare that many governments dared to live beyond their means

Gabriel Boric became Chile's president, promoting a new constitution packed with what many saw as "utopian" promises, including free healthcare, education and housing. Investors fled and the peso fell 30 per cent in just six weeks, inflaming opposition to the constitution, which voters overwhelmingly rejected in a September referendum. Boric was forced to turn his radical cabinet hard towards the centre.

In the past decade, low rates made borrowing so easy and sovereign default so rare, that many governments dared to live beyond their means. Now, as borrowing costs and default rates rise, change is being forced on them, starting in the less-developed nations most vulnerable to foreign creditors.

One is Egypt, ruled by Abdel Fattah al-Sisi. As markets pressed Egypt to devalue its currency and lower its twin deficit to secure IMF aid, national authorities held out for months. When they relented, the devaluation was massive — more than 20 per cent. Ghana, too, resisted IMF aid and its conditions of financial discipline as insulting to this "proud nation". But as markets battered the Ghanaian cedi, fuelling calls for President Nana Akufo-Addo to resign, he relented and asked for IMF help.

From Pakistan to Hungary, markets have compelled central banks that thought they could get away with low real rates to return to economic orthodoxy, and resume raising rates. Hungary imposed an emergency rate rise and aides to rightwing prime minister Viktor Orbán, who built his base by defying Europe, promised spending cuts and tax increases to qualify for EU financial help.

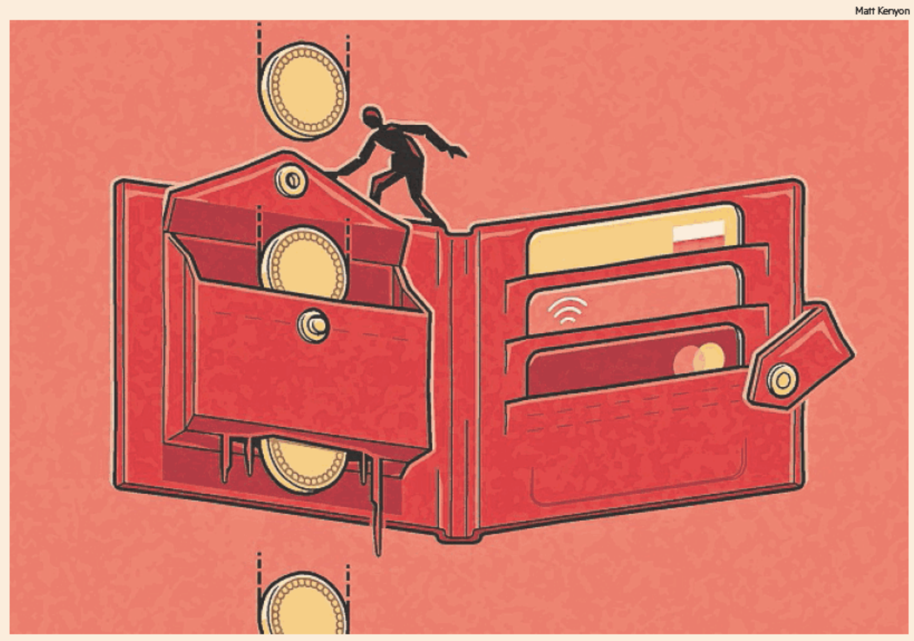
Markets will reward discipline. Among those punished by them back in the 2010s, Argentina and Turkey clung to unorthodox policies, and still face punishingly high borrowing costs. Greece pursued orthodox reforms and is now a borrower in good global standing.

Only now, discipline has a stricter meaning. Whether it is the US running up trillions in liabilities for Medicare and social security or Europe shovelling out energy subsidies, even superpowers are ill advised to borrow as if money were still free. In the new tight money era, markets can turn swiftly against free spenders, no matter how rich.

The writer is the chair of Rockefeller International

Wage inflation is a mirage for most workers

Matt Kenyon



BUSINESS
Rana Foroohar



Economic policymakers and business leaders worry a great deal about wage inflation. Average workers, not so much. That's because real global monthly wage growth — which reflects the purchasing power of wages once cost-of-living inflation is taken into account — actually fell to negative 0.9 per cent in the first half of 2022. That is the first time since 2008 that real global wage growth has been negative, according to a new report by the International Labour Organization.

While inflation in areas such as food and fuel hits the poor in every country hardest, the comparative decline in real versus nominal wages has actually been sharpest in the rich world. Among advanced G20 countries, real wage growth in the first half of 2022 declined to minus 2.2 per cent, whereas growth in emerging G20 countries slowed but remained positive at 0.8 per cent.

Among rich countries, North America has been particularly hard hit; average real wage growth in the US and Canada fell to minus 3.2 per cent in the first half of 2022. No wonder the hand-wringing about wage-price spirals among policymakers is so at odds with the actual experience of most North American workers.

Although Federal Reserve chair Jay Powell acknowledged in a speech last week at the Brookings Institution that cost-of-living inflation was eating up a larger percentage of the average pay cheque, he also noted there were 1.7 job openings for every unemployed worker in the US.

While pandemic-related supply chain issues have mostly abated and energy markets are stabilising, "wage increases are probably going to be a very important part of the [inflation] story going forward", said Powell. "What you see is a real imbalance between supply and demand," he continued, with wage inflation still too far above the Fed's 2 per cent inflation target rate for central bankers to relax.

Why is this? Certainly, the Covid-19 pandemic played a huge role; workforce participation plunged in 2021 and has yet to recover. Many people remain out of work because they continue to struggle with illness or are caring for dependants. But a bigger part of the story is a rise in retirement, which accounts for more than half the 3.5mn-person labour shortfall in the US. Older people who lost jobs during the pandemic are having trouble finding work again, even in a tight market. Others are simply retiring early because of the wealth effect from housing and stock market gains of recent years.

Beyond this, Fed vice-chair Lael Brainard has questioned whether trends from deglobalisation to demographic shifts to climate disruption may also have changed labour market elasticity, creating more volatility and inflation.

Whatever the underlying causes of tightness in the labour market, the fact that pay rises simply aren't keeping pace with other kinds of inflation creates a huge challenge for policymakers and business leaders. In response to rising inflation, companies are increasing prices for consumers, while imposing "shrinkflation": reducing both product sizes and the quality of services in places such as hotels, restaurants and airports.

They are also investing in technology, some of it job-displacing, at faster than usual rates in an attempt to offset wage inflation. But in the most developed nations, such as the US, where consumer spending makes up as much as two-thirds of gross domestic product, if people don't have more money in their pay cheques, neither business nor the economy can grow strongly.

> The fact that pay rises simply aren't keeping pace with inflation creates a huge challenge

In the past, productivity gains made by workers have justified wage rises. But, according to the ILO, this year shows the largest gap recorded since 1999 between productivity growth and real wage growth in high-income countries. People are working harder and better. But they simply aren't seeing as much monetary benefit from their efforts as they would have in the past.

Given the gap between productivity and wages, there is reason to think that companies, particularly those enjoying higher than average profit margins, have room to increase labour's share of the pie. I would love to see various strategies deployed on this; incentives for companies that invest in worker training or other forms of productive capital expenditure that support labour, for example. Americans might also look to Europe, where job-retention schemes and wage subsidies kept real wage levels higher than in the US, even when adjusted for energy inflation.

Americans are also struggling with a different kind of inflation created in large part by decades of expansionary monetary policy — asset price spikes. Housing services inflation is 7 per cent and rising. But even this number belies the real impact of the cost of housing. Between much higher interest rates and high prices, the average mortgage payment was 77 per cent higher in October than it would have been the previous year, according to the website Realtor.com.

This gets at an important truth. Goods and services inflation has only been rising for the past couple of years. But we have had plenty of inflation in other areas, including asset prices, over the past few decades. It is a bitter irony that while monetary policy fuelled the bubble in everything, and central bankers must now quash inflation, they have no tools to fix what's truly broken in labour markets.

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Brussels should not protest too much on energy

ECONOMICS
Martin Sandbu



A siege mentality has taken hold of EU industries and their political friends. They feel kneecapped by how Vladimir Putin's energy war makes gas and power so much more expensive than what competitors elsewhere pay. And the US's belated conversion to green industrial policy adds insult to injury by luring investment with discriminatory subsidies.

Both concerns were channelled by French president Emmanuel Macron in Washington last week. Many other leaders have adopted the message that European competitiveness is under existential threat. But such alarmism risks leading EU politicians and industrialists down a strategic dead end.

Overall, manufacturing output volumes in the EU and eurozone are at record-high levels. In all EU countries but five, industrial production was higher in September than a year earlier. If Putin wanted to cause Europe-wide industrial death to force betrayal of the Ukrainians, he has failed. This resilience ought to be more celebrated.

So the region's industrialists protest too much. It is too soon to declare victory. Price spikes are only gradually phased in. Some companies are protected by state subsidies or price caps. But these have rightly benefited households most and states cannot grant huge support packages forever. Current performance could still give way to decline.

But this leads to a deeper point. The EU is not richly endowed in traditional energy resources. This has entailed two harsh economic consequences. One is, as Helen Thompson has highlighted in her book *Disorder*, a geostrategic vulnerability due to energy dependence on outsiders. The other is a comparative disadvantage in energy-intensive production. If cheap Russian gas temporarily hid this disadvantage, it is now back with a vengeance.

The cool-headed lesson to draw is that an economic structure built on production and exports of traditional energy-intensive goods is bad for Europe. The sensible policy for an energy-poor region is to import energy-intensive goods from those places where energy is abundant and sell products and services whose inputs contain less energy. The same can be said for industries whose productivity depends on plentiful hydrocarbons as feedstock.

> A high-skilled population should specialise in high-tech, knowledge-intensive production

There are three retorts to this argument. The first is that while traditional energy sources are scarce in the EU proper, the European economy is interwoven with hydrocarbon-rich neighbours. But one safe partner, Norway, is too small. And others, as Russia shows so starkly, threaten rather than safeguard Europe's values and interests.

A second retort is that some energy-intensive industries are necessary for security reasons — as is energy itself. But most industries are not strategic. If Europe produces less fertiliser, ammonia and commodified glass, ceramic or paper products, so be it. A prosperous, high-skilled population should specialise in high-tech, knowledge-intensive production in such sectors and import the rest, stockpiling essentials in case of disrupted supply chains. An industrial restructuring in that direction will make the economy richer and safer from external shocks.

The best retort, however, is that a lack of fossil energy endowments does not doom Europe to energy dependence overall. With capacity to generate, transmit and store renewable electricity, Europe's self-sufficient supply of power can be plentiful and cheap. Near-zero electricity prices could do more for the EU's production of (emissions-free!) cars than discriminatory US tax credits will ever do for America's.

The goal, then, is to grow an economy intensive in carbon-free energy and knowledge. Industry should electrify everything that can be electrified and develop production methods best suited to a renewable energy system.

Europe's concern should be that it subsidises too little — especially in renewables and grid capacity — not that the US subsidises too much. More EU common spending is needed, and new fiscal rules must coax more investment out of national budgets. EU leaders have made welcome remarks in this direction in recent days.Carbon tariff plans must be expanded and coupled with tougher domestic carbon pricing.

On this, it should seek a US partnership. Washington is already interested in a pact keeping out "dirty" steel from China and others; Europe should embrace this interest and try to widen it to a broader carbon tariff deal. Donald Trump once said: "If you don't have steel, you don't have a country." Europe should resist such old-industry protectionism. Its line should be: let all steel used in Europe be green — and make Europe the cheapest place to produce it.

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Starmer must plot a bold route back to Europe for Britain

Andrew Duff

The rest of Europe looks with amazement at the goings-on in Britain. Faced with a Brexit that has demonstrably failed, Rishi Sunak's government seems hapless. But his putative successor, Labour leader Sir Keir Starmer, refuses to plot a bold way back to Europe, saying he wants to "make Brexit work". Any radical reform of the UK's relations with the EU is likely to be delayed until at least his second term — a position that would be both tardy and presumptuous.

Instead, Starmer should promise to forge an immediate customs union with the EU (not, note, to rejoin the EU customs union). The commission has already made useful preparations to modernise the EU's customs association with Turkey, another troubled neighbour with a large economy. So long as all goods are included in its scope, and an accompanying agreement is struck on value added tax and on plant and animal health, the new customs union will eliminate practically all Brexit border checks — bringing instant relief to Northern Ireland. The UK will align with key aspects of EU trade policy for goods, including tariffs, allowing Starmer to ditch most of the Tories' oversold free trade triumphs.

The next step would be to negotiate mutual access between the internal markets of the UK and EU, grounded in a new treaty aimed at boosting the flow and exchange of goods, capital, services and workers. As the UK reintegrates with the EU regulatory regime, it will be guaranteed participation in spending programmes (notably the Horizon science scheme). It will participate in the agencies that manage and monitor EU policy — to the relief of overstretched domestic regulatory bodies. The EU-UK Trade and Cooperation Agreement will be replaced by fresh deals on competition, state aid and taxation policy and the elimination of non-tariff barriers. The EU's association agreement with Ukraine is a model for a comprehensive free trade area pitched at widening dynamic alignment — including, unlike Switzerland, viable dispute procedures.

> Political engagement by the UK could give birth to a new category of EU affiliate state

In a radical improvement on any of the EU's current agreements with its neighbours, Britain should require voting rights in the European Council — without a veto — on all relevant single market legislation. This would include a vote on the revision of current laws, such as one on chemicals or Solvency II for insurance, as well as the extension of European integration into new fields such as climate policy and digital services. British ministers should participate in council negotiations on national laws as well as trade agreements with third countries. The UK will contribute to the EU budget consistent with its rights and obligations but it will not subscribe to the EU's common agriculture, fishery or monetary policies.

Such unprecedented political engagement by the UK will give birth to a new constitutional category of EU affiliate state. This will require EU treaty change, which in the wake of Brexit and Ukraine is in any case overdue. There is no post-Brexit solution that does not entail radical reform on the side of the EU as well as a bold change of gear in Britain. Only a more federal union can be a capable leader of the wider European neighbourhood.

Anglophobes will choke at this (as will Brexiteers). But Britain's geographic proximity, cultural ties, membership legacy, economic and security clout make it a special case. Both sides need a privileged partnership. By showing ingenuity, the EU can turn a potentially troublesome neighbour into a useful security partner. It can extend its own normative power and burnish its democratic credentials. Where UK affiliation leads, others, such as Norway and even Ukraine, seeking to upgrade their relationship with Brussels, may follow. EU orthodoxy tries to outlaw "cherry-picking" but today all Europe requires a confident, democratic approach to flexible differentiated integration.

The writer is a former Member of the European Parliament



Workplace wellbeing
'You can't yoga your way out of the issues creating ill health'
WORK & CAREERS

Unexpected perils and opportunities of a sabbatical



Pilita Clark
Business Life



Kenneth Andersson

What does the new chief financial officer of HSBC have in common with one of the world's top crime writers and a billionaire Silicon Valley tech titan?

The answer is not obvious, because each is a member of an unusual club. They all took sabbatical leave from an enviable corporate job and returned to find themselves on a path to bigger, bolder success.

Georges Elhedery's story is the most surprising. He was in his late forties and co-head of investment banking at HSBC in January when he announced he was taking six months off for "personal development". This was a rare move for anyone in the remorseless world of investment banking, especially a senior banker. So was what happened next.

When Elhedery returned, having learnt some Mandarin, he was promoted to chief financial officer in a move that made him a contender for the top job of chief executive.

Here lie two important lessons, starting with the idea that a sabbatical is career suicide because anyone who takes one is visibly less committed to their career. Elhedery shows otherwise, which leads to a second lesson: beware of mouthing off about a colleague heading to apparent career oblivion via extended leave. You might find them firmly back in the office — and your boss.

Different conclusions can be drawn from other members of the supercharged sabbatical club. Before he became a bestselling Norwegian crime writer, Jo Nesbø studied to be a financial analyst and was headhunted by a top brokerage firm, DNB Markets, to build up its options division.

He was also playing guitar in a band at night and, after a year, was so burnt out he told his boss and the band he needed six months off. "I hopped on a plane to Australia, to get as far away from Norway as I could," he once wrote.

On the long flight from Oslo to Sydney, he came up with the plot for a novel about a flawed but likeable detective named Harry Hole. By the time he got back home, Nesbø had almost finished the first of what would become the hugely popular Harry Hole thrillers and was on his way to becoming a publishing phenomenon worth millions of dollars.

> **"Beware of mouthing off about a colleague heading to apparent career oblivion via extended leave"**

Nesbø's story offers a different lesson about sabbaticals: they do not always deliver a tanned, rested worker fired up to do years more loyal work. They sometimes produce a competitor, such as Marc Benioff, co-founder of the Salesforce software company.

Benioff was earning a multimillion-dollar salary in what he described in a memoir as "the greatest job I could ever have imagined", at the software powerhouse Oracle, when he sank into a profound malaise. When he told his boss, Larry Ellison, Oracle's co-founder, the older man told him to take a three-month sabbatical. Benioff went to India, found guidance from a "hugging saint" and began to think about forming his own software business. Two years later, he left Oracle and set up Salesforce, sparking a sometimes tetchy rivalry with Ellison.

What does all this show? For one thing, easy assumptions are often wrong in corporate life, as they are in much of life generally. The urge to have a rest from years of relentless work burns brightly in many people, including those with no desire to quit or slack off.

Equally, sabbaticals do not automatically guarantee company loyalty. Their popularity will inspire commitment in many workers, even if research shows the cheering effects of even six months off can fade soon after returning to work. But people such as Benioff and Nesbø are unlikely to be held in place by the lure of a long break, no matter how much they might want it at the time.

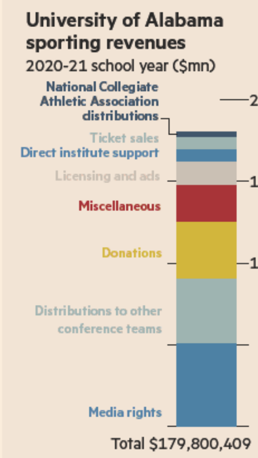
Ultimately though, if you work for a company that offers a sabbatical, you are exceedingly fortunate, especially in the US. Just 5 per cent of employers offered paid sabbatical leave in 2019, according to a Society for Human Resource Management survey of its US-based members. A barely much better 11 per cent had an unpaid sabbatical programme.

For most of us, this type of leave is precious, so grab it if you can, even if it fails to deliver everything you, or your colleagues or bosses, are expecting.

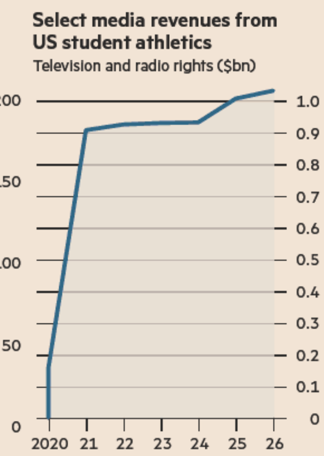
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Lex.

US college football: beyond a jock



Source: Sportico database



Source: National Collegiate Athletics Association

In 2035 or so, an economist may win a Nobel Prize for showing that post-pandemic inflation did not come from supply bottlenecks or stimulus payments but from an arms race in American college football.

Take Auburn University. The problem of this Alabama state institution is not that it is paying someone a lot to coach its high-profile football team. Instead, the college is currently paying two different men close to $50mn for the next few years *not* to coach its team.

College football coaches are demigods in America. Their names are emblazoned on town welcome signs. Their pay runs into millions and is largely guaranteed.

Auburn has sacked two disappointing team leaders since 2020. The pair had contracts with hefty buyout clauses.

Schools such as Auburn are increasingly willing to sack coaches when teams lose a few games. Even hard-bitten Wall Street bankers may be shocked by the savage Darwinism of the profession. Moreover, it is manifesting itself mostly at tertiary education institutions theoretically run for state citizens.

College football has become a commercial juggernaut. Television rights for the top college football league, which includes Auburn, the University of Alabama and University of Georgia, are worth $300mn annually to Disney's ESPN sports broadcasting division. A separate package for national playoff games shown on ESPN goes for $470mn per year.

The highest payouts go to teams that make championship rounds. A top coach is seen as the sine qua non to recruiting new, non-remunerated talent. Salaries and buyouts are often paid for not by taxpayers but by non-profit "booster" clubs of wealthy superfans. Their fanaticism helps fuel the frenzy.

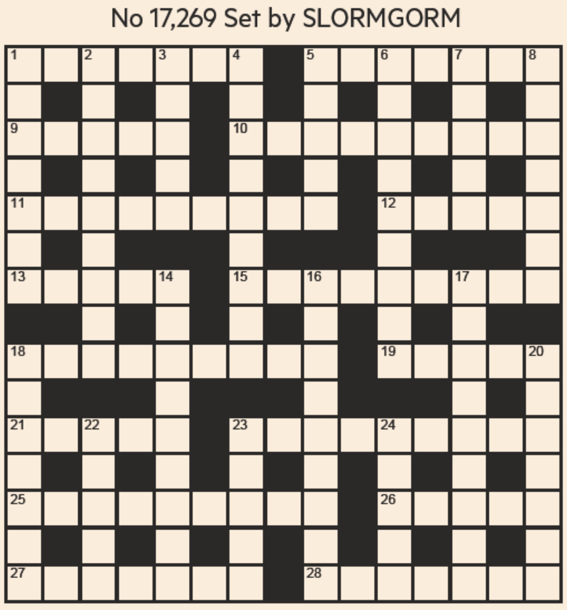
University bosses argue that most of the spoils go to athletic departments and universities in the form of alumni donations and goodwill. The dominant college football team of the past 15 years is at the University of Alabama. A majority of students there now enrol from out of state, paying tuition fees treble those of state residents.

Still, there is a jarring contrast between college football as a big money game and the Corinthian ideals of founders. It is just one facet of US universities where education now comes second to business. That is something for all Americans to mull over, not just would-be Nobel laureates.

NIKKEI Asia The voice of the Asian century

CROSSWORD

No 17,269 Set by SLORMGORM

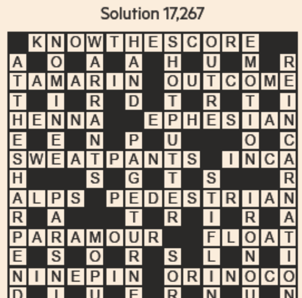


ACROSS
- 1 Pagan woman in Fife US cops got a lead on (7)
- 5 Flipping embarrassed, having slipped by river (7)
- 9 On the point of a fight (5)
- 10 What corporation taxes changed in law site (9)
- 11 Old paid employee nursing bishop's attentive (9)
- 12 The First Lady books to see a sports meet (5)
- 13 Weak and woozy (5)
- 15 Inferior court ultimately employed no English judge (5-4)
- 18 Karate student seen by strip of land around town (5,4)
- 19 Clubs in contests without runs after first of matches (5)
- 21 Man hugging foremost of pines in wood (5)
- 23 A vet with a kilt flapping about's very gassy! (9)
- 25 Duelists worried about a state of tiredness (9)
- 26 Some seen inside bare national stadium (5)
- 27 Official restricting E expresses hesitation for joints (7)
- 28 Perhaps buy a meal for editor given medical care (7)

DOWN
- 1 Set out reason deputy must take lead role? (4,3)
- 2 Wretched existence seen in Lassie's biography? (1,4,4)
- 3 One really dislikes milliner half the time (5)
- 4 Recently-built Englishman's home in English city (9)
- 5 Wander aimlessly around Germany and Split (5)
- 6 Roguish type getting mother a port in Holland (9)
- 7 Roofer possibly knocked over last of ice cream (5)
- 8 House in which several acts might be looked at? (7)
- 14 Fruit eaten in a sloppy manner with grin (9)
- 16 Celt I lent pants is great thinker (9)
- 17 One who plans travelling in the arctic (9)
- 18 Better move slowly with heartless gangster around (7)
- 20 One often seen waiting in jam on a road (7)
- 22 Old hat of father's seen half moth-eaten! (5)
- 23 Support the British prime minister (5)
- 24 A possible vampire close to me? Calm down! (5)

JOTTER PAD

Solution 17,267



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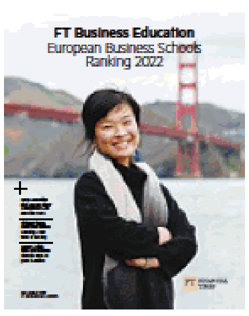
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Rays of innovation shine through the clouds over Europe

Andrew Jack
is the FT's global education editor

Europe faces tensions on many fronts, in the wake of the pandemic. But its business schools have the potential to play an important role in preparing for the future of the continent.

The political climate is fragile, with turmoil in the UK since its citizens voted for Brexit, and conflict within or between many EU member states. Russia's war in Ukraine has led to a loss of life and destruction of infrastructure on a scale not seen in the region since the second world war.

The conflict has resulted in the displacement of people, creating millions of refugees; it has fuelled volatility in energy prices, and it has slowed economic growth. But it has also brought a new solidarity between countries and towards individuals fleeing violence and intimidation. That includes support from many of the continent's universities for academics and students fleeing Ukraine and Russia.

The war has also stimulated fresh reflection by business and policymakers on the urgent need for new approaches to economic growth, including the energy transition away from fossil fuels and dependency on Russian gas and oil.

As we report in this magazine, that is playing out in the classroom, with business schools offering a range of innovative specialist courses (see energy feature, page 18), qualifications and pedagogical approaches that build on European traditions while responding to emerging trends.

Even amid resistance or pushback on some US campuses under political pressure around sustainability, for example, there is a long-established European commitment to tackling environmental concerns.

Julian Birkinshaw, a professor at London Business School and co-author of a recent British Academy report, Teaching Purposeful Business in UK Business Schools, has called (page 21) for a shift away from shareholder primacy in finance classes, a move towards problem-solving approaches around grand societal challenges, and more collaboration on sustainability.

That is one of many pressure points for reform — something highlighted in a review of a book in which business school deans reflect on their managerial responses to recent disruptions, including Covid-19 (page 43).

Digital transformation is pivotal and widely embraced. The "metaverse" may have been conceived in California, but Europe's business schools are embracing the technology, both in courses and as a teaching tool, as we describe (page 12).

Despite the potential for division and partisanship on social media, recently crystallised in Elon Musk's takeover of Twitter, Siddharth Venkataramakrishnan describes a new focus in technology around online community building on business apps (page 41).

Elsewhere in this issue, we examine the final frontier of the new economy: space itself, a specialist subject at several schools as it becomes a substantial source of growth in its own right and an influence on many terrestrial activities (page 38).

Closer to home, both Europe and North America are feeling a squeeze in applications from their domestic markets for masters programmes in business, as the labour market heats up and employers seek to retain staff tempted to leave to pursue studies or join the "great resignation".

Nonetheless, Europe has an advantage in offering shorter and cheaper courses than the classic two-year in-person MBA pioneered in the US, which is coming under renewed pressure. Europe's graduates also have an advantage in that typically they speak more languages and are more exposed to multiple cultures and countries than their US peers.

At a time when, after the upheaval of the pandemic, more employers are seeking to recruit specialists, regardless of where they chose to live and work, that could be a competitive advantage for Europeans. While it remains difficult for them to send students to China because of continued lockdown restrictions, Europe's business schools — including those in the UK, in spite of Brexit — continue to attract international students from there and elsewhere.

As our annual composite ranking shows (pages 23-29), France is still the European country that is home to the largest number of strongly performing business schools.

Our list of top institutions seeks to highlight schools around Europe that rank strongly across the breadth of their different courses. It is a useful high-level pointer to reputation, influence and impact, but it must be viewed within a wider context.

Those contemplating studying business should scrutinise rankings of the individual courses that interest them, as well as broader factors that cannot be reduced to metrics. There is no substitute for visits and discussions with the schools and their alumni.

As FT correspondent Javier Espinoza relates in his account (page 10) of studying for an EMBA, the personal investment and sacrifice is at least as significant as the financial commitment, creating frustrations but also leaving a gap in his life once his course came to an end.

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European Business Schools 2022

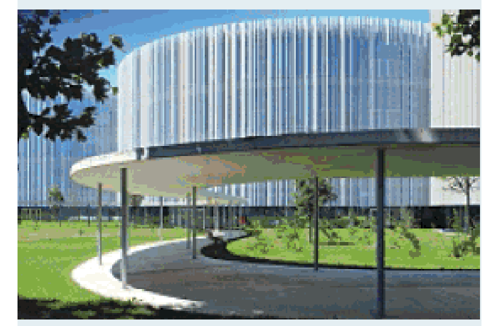
Growing global competition for students, economic challenges triggered by Covid, and the fallout from Russia's war against Ukraine are all piling pressure on Europe's business schools. Overleaf, **Andrew Jack** analyses how institutions in this 'ranking of rankings' are responding, building on their diversity of offerings and value for money compared with rivals around the world ▶

Rank 1
Making history

HEC Paris takes the top spot in the European ranking for the fourth year in a row and a record 11th time overall.

Rank 4
Client focus

Italian school SDA Bocconi is third in Europe for custom executive courses and fifth for the MBA.



Rank 5
Swiss peak

St Gallen continued to dominate the Masters in Management, topping the table for the 12th consecutive year.

Rank 6
Salary hike

Alumni of Iese in Spain and HEC Paris MBA had the joint highest average pay rise, of 124 per cent over their pre-course salary.



Financial Times European Business Schools 2022: the top 25 schools
Full table p23-29, based on the MiM, MBA, EMBA and executive education rankings

		Location
1	HEC Paris	France
2	London Business School	UK
3	ESCP Business School	FR/DE/IT/ES/PL/GB
4	SDA Bocconi/Università Bocconi	Italy
5	University of St Gallen	Switzerland
6	Iese Business School	Spain/US
7	Edhec Business School	France
8	ESMT Berlin	Germany
9	Essec Business School	France
10	IE Business School	Spain
11	IMD	Switzerland
12	EMLyon Business School	France
13	WHU — Otto Beisheim School of Management	Germany
14	Rotterdam School of Management, Erasmus University	Netherlands
15	Insead	FR/Singapore/UAE
16	Warwick Business School	UK
17	Esade Business School	Spain
18	University of Cambridge: Judge	UK
19	Imperial College Business School	UK
20	Stockholm School of Economics	Sweden
21	Mannheim Business School/University of Mannheim	Germany
22	University College Dublin: Smurfit	Ireland
23	Vlerick Business School	Belgium
24	Nova School of Business and Economics	Portugal
25	University of Oxford: Saïd	UK

Rank 10
Faculty diversity

Spain's IE, based in Madrid, is one of 10 European FT-ranked business schools to have gender parity (50:50) among full-time faculty.

Rank 11
Global learning

Switzerland's IMD has the most international full-time faculty, with 98 per cent of academic staff being citizens of other countries.

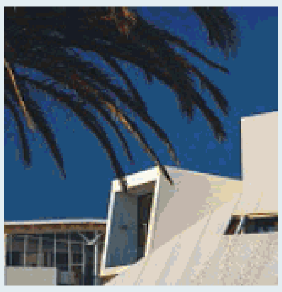


Rank 15
Top for MBA

France's Insead has the top-ranked MBA of all European business schools, partly thanks to high alumni salaries, at an average of $186,784.

Rank 24
Made it

Portugal's Nova, in Lisbon, makes the top 25 after coming close in the past two years.



Rank 23
On the up

Vlerick Business School in Belgium is the highest climber in the top 25, moving up 16 places.

Rank 21
Highly qualified

Mannheim is one of 31 ranked schools where 100 per cent of their full-time faculty have doctorates.



Rank 17
Short and sharp

Spain's Esade is among the best in Europe for executive education, at fourth for open and seventh for custom courses.

By Sam Stephens

PHOTOS: DEEP PIXEL / ALAMY; MARCO SALA / ALAMY

> ‘The biggest differential for Europe is languages. Students have worked and studied in multinational and multicultural environments, and are open to those careers’

HEC Paris retains its position as the leading European business school and one of four institutions based in France in the top 10 of the latest FT ranking.

London Business School holds on to second place, ahead of ESCP, which has six campuses across Europe, followed by SDA Bocconi in Italy and the University of St Gallen in Switzerland. The composite ranking is based on schools’ performance in FT rankings of MBAs, executive MBAs, Masters in Management and custom non-degree executive education courses.

The data come at an important moment for European business schools, amid intensifying global competition for students and rising international tensions as countries such as China and Russia become more isolated. Russia’s war against Ukraine has cast a shadow over schools in the region, leaving students from both countries stranded abroad and, in some cases, faculty fleeing. The war has also set back economic growth across Europe.

Meanwhile, Frank Bournois, dean of ESCP in Paris, notes: “We are getting constant applications from Asia and particularly China, but we cannot send students there [for exchanges and placements]. The situation might open up next year but for now, with quarantine, it’s a real blocker for reciprocity.”

A recent survey from the Graduate Management Admission Council, which runs the GMAT admissions test, showed an overall decline in applications for business masters programmes in Europe and North America. GMAC attributed this partly to employers seeking to discourage staff from quitting to take further education courses in the wake of the Covid-19 pandemic and attempting to retain staff in the face of resignations and tight labour markets.

Schools in Europe remain popular, though. “[They] provide a quality education for a fraction of the cost charged by leading business schools in the US,” says Eric Cornuel, president of the European Foundation for Management Development (EFMD), which accredits institutions globally.

He argues that European schools offer strong career services and internships, have a “tradition of international mobility and collaborative spirit”, are “rooted in the European spirit of diversity and liberal values”, and “are located in very attractive destinations, which helps in their global branding”. Cornuel adds that many European schools are building on rising demand to focus on ethics and sustainability in their courses, alongside the need to foster skills around topics such as digital transformation.

> ‘Business schools in Europe provide a quality education for a fraction of the cost charged by leading schools in the US’

The UK has continued to report relatively strong demand from international students, despite the turmoil since Brexit. Changes to the country’s visa regime and a drop in sterling’s value have mitigated the feared impact and underpinned applications from abroad (see page 36).

“The biggest differential for Europe is languages,” says Amber Wigmore Alvarez, chief talent officer at Highered, the online careers platform for EFMD. “Students have worked and studied abroad in multinational and multicultural environments, and are open to those careers. You don’t see that so much in US and Asian schools.”

Bournois at ESCP says some business schools across Europe are developing shorter online executive education courses and joint diplomas, giving students the opportunity to study for degrees in business combined with engineering and other subjects.

The FT ranking’s methodology compensates to identify top-performing schools even when they do not offer the full range of ranked qualifications. It adjusts for those offering joint programmes and includes several institutions that were not in the final published rankings of leading global schools.

Individual rankings, including for MiM, MBA and EMBA, are based on factors such as alumni salaries, career progression and international course experience, as well as research impact and gender balance among students, faculty and advisory boards.

The European ranking includes 24 French business schools, 18 in the UK and eight in Germany. There are three from Russia, two from Turkey and one each from Slovenia and the Czech Republic.

HEC Paris ranked top in Europe for custom and open executive programmes, Insead for the MBA and the EMBA (for its joint programme with Tsinghua in Beijing), and the University of St Gallen for the Masters in Management.

The University of Zurich has the lowest share of female faculty, at 15 per cent, while 10 schools achieve gender parity. The share of international faculty is as low as zero at Italy’s Bologna Business School, rising to 98 per cent at IMD in Switzerland.

Average European salaries, adjusted for international purchasing power parity three years after completion of MBAs, ranged from $67,000 at Audencia in western France to nearly $187,000 at Insead, which has campuses in Paris and Singapore. The figures exclude alumni on the highest and lowest salaries for each school.

For EMBAs, average salaries ranged from $92,000 at ISEG in Lisbon to nearly $400,000 for Insead’s joint programme with Tsinghua. For Masters in Management, they ranged from $40,000 at Henley Business School in the UK to $138,000 at the University of St Gallen.

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Our man in business school and beyond

Studying for an executive MBA online and in Madrid while reporting from Brussels was exhausting, inspiring — and oddly addictive, writes EU correspondent **Javier Espinoza**



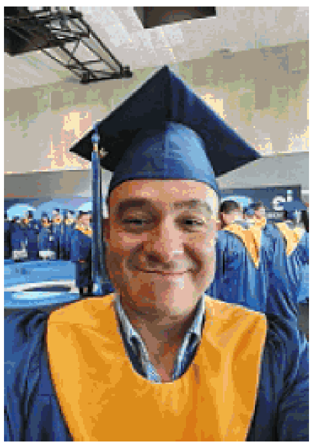


PHOTO: SARAH VAN LOOY

The end of my executive MBA was supposed to mean the beginning of freedom after 15 months of gruelling work on top of my day job. But I caught myself reminiscing about the good old days when I had no life. This was a surprise because, during the last few weeks and months, I had found myself resenting the assignments and forums that consumed the little time I had outside my work as the FT's EU correspondent.

When I was preparing to start the EMBA, I made a list of all the things I needed to cut out of my life, albeit temporarily. These included my subscription to The New Yorker, trips abroad, my weekends and reading fiction. My semi-regular morning jogs had to stay if I were to keep my sanity. The biggest trade-off was giving up Saturdays, my favourite time of the week, when you have the time to catch up with your thoughts.

The EMBA, taught at IE Business School in Madrid and online, was a test of my stamina and that of my classmates, who came from diverse business backgrounds and nationalities. Labelled as a part-time programme, the degree looked anything but. In 15 months, we devoured roughly 700 pieces of reading — mostly case studies — spread over 35 courses and some 245 in-person and virtual sessions.

We also had to contribute at least two posts a day to online discussion forums. I spent, on average, 30 hours a week cutting my teeth on fun topics such as managing people and negotiation skills, but also more painful tasks, such as calculating the cost of equity and learning how to put together business valuations in corporate finance. Our last project — called SubHero — aimed to do for mobile subscriptions what Amazon has done for online shopping.

I came out of the programme with crucial gains and many lessons. I made sure my performance at work always took priority, but I vastly underestimated how much the EMBA would take over my life. I would wake up already feeling behind, trying to squeeze in the reading and the posts for the forums before I started my day job. I felt like someone was holding a gun to my head all the time and I often had a heaviness in my chest.

I learnt how to be more confident, which — as we have seen time and again in UK politics — can get you chosen as prime minister regardless of competence. But my confidence is still a work in progress and I have no ambitions to lead any country any time soon. Another important lesson was that competence is measured not only by what you do but also in the way you shape the narrative for others.

You do not need to go to business school to discover that, in the end, it is the relationships you build during study that matter the most — but the course was a timely reminder. I also learnt that, no matter how many hours you spend studying something, you are only scratching the surface. However much you learn at business school, only real-world practice can properly teach you what to do.

Like a marathon runner, I began to falter as I approached the finishing line. I counted the last miles every day and could not wait for the torture to end. The EMBA is one of the hardest things I have done and took over my life — but it stopped suddenly and has left a big gap that I am slowly filling with new projects.

It was a bumpy journey. We started in April 2021, when lockdowns and travel restrictions were still hindering mobility for most, and we finished when the war in Ukraine was a few months in. We had to juggle not only our jobs but



1
Javier Espinoza in Brussels, where he continued reporting alongside study
2
Executive MBA graduation day at IE Business School in Madrid

personal events — the death of a father, or the birth of a child, a break-up or a new start.

There are moments when I find myself feeling empty without the pressure of business school. I miss the structure that pursuing a degree gives you. Unlike real life, an EMBA gives you a script to follow and it can become like a challenging game where you complete tasks and win points. It gives you an added sense of direction.

I am not alone in feeling this. Lucy Tsotsorina, a marketing director and a former classmate from Ukraine, agrees. "I was happy to have my Saturdays back, but I felt I lost some purpose and a sense of belonging," she says.

"I refined my skills in terms of teamwork," she adds. "It was challenging to work with people with different business ethics, based in different countries and timezones. We're more skilled [working with people] we meet, to find the path to communication, mutual understanding and patience."

Unlike real life, an EMBA gives you a script and becomes like a challenging game where you win points

I miss the people, too, despite their complications. Put humans in a room — even a virtual one — and politics soon arise and issues emerge. Having worked in a British environment for the best part of two decades, it was eye-opening to collaborate with people from different working cultures. It was challenging, for example, to adapt to their sometimes more relaxed approach to deadlines.

As for the value of the degree, I do not think an EMBA alone is the key to unlocking a promotion and a higher salary. But the way you use the skills you learn can have a transformative effect on the way you interact with your peers and how you drive your career.

For now, I am relishing having my Saturdays back, nursing my withdrawal symptoms with a Netflix overdose and rediscovering what it is like to waste my time.

The Financial Times and IE are partners in Headspring, an executive education venture.



Making the metaverse a real alternative

Teaching institutions are increasingly exploring the use of virtual worlds — both for the future of learning and for business itself, says **Seb Murray**

Immersive
Alain Goudey of Neoma and (top) its virtual campus



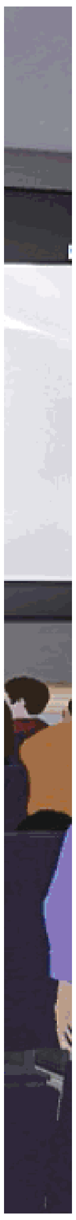
From a lectern beneath three giant screens, Professor Alain Goudey gives lessons on digital transformation to students from around the globe in a lecture hall that can potentially seat hundreds. All of this, however, is in the virtual realm — one that offers a glimpse of a potential future for business education.

His employer, Neoma business school in France, is one of many forward-thinking European institutions that are stepping into the metaverse — an immersive digital world where students are represented by 3D avatars. This is because of its potential to make learning more interactive, but also because of the commercial opportunities. Management consultancy McKinsey estimates the metaverse will generate up to $5tn in value by 2030.

"It's very important for business schools to be at the forefront of educating future managers about the metaverse," says Goudey, a professor of marketing and associate dean for digital at Neoma. "It is going to shape the world of tomorrow."

Although the metaverse is hailed by some as the next generation of the internet, business schools do not agree on an exact definition. Nor do they agree how — or even if — it will work in practice.

At Neoma, students experience the metaverse as avatars in a virtual campus. The school has also developed several virtual reality case studies that submerge students in actual





corporate dilemmas, enabling them to apply theory in practice. "Immersion enhances the power of the role-play and the simulation," Prof Goudey says. "It's amazing to see how deeply it is impacting pedagogy."

He says Neoma hopes to embed VR in the virtual campus to enhance the learning experience for remote participants.

The potential of the metaverse has been thrust into the public psyche in the past year by technology companies such as Meta (formerly Facebook), which are racing to create avatar-filled virtual worlds. Now, some of these tech giants are working with business schools to enhance the educational experience with immersive technologies.

Polimi Graduate School of Management in Milan intends to deliver seminars with Microsoft in which participants on the International Flex Executive MBA will learn about potential business opportunities in the metaverse.

In addition, Polimi is planning for EMBA participants to try out VR headsets and experience various scenarios, enabled by Fadpro, an edtech start-up part-owned by the school. These will include virtual trips to companies, allowing students to gain first-hand business experience without physically having to travel to the location.

Looking ahead, Polimi's dean, Federico Frattini, believes the metaverse could work well for teaching "soft skills" such as leadership and teamwork. This is because it can enable students to pick up on non-verbal behaviours — gestures, posture — more easily than when video-conferencing. "This is a context in which replicating a physical environment through technology can improve learning outcomes," Frattini says.

Investment in sophisticated tools for interactive learning has been accelerated by the coronavirus pandemic, which pushed business schools into the virtual realm.

"In our sector, there has been a certain hesitancy to adopt new technology for fear of it not being good enough," says Barbara Stöttinger, dean of WU Executive Academy in Vienna. "What the pandemic has done is opened up our minds. It has shown us the possibilities and the speed with which we can innovate."

This year, WU has partnered with Tomorrow's Education, an edtech start-up, to launch its Professional Master of Sustainability, Entrepreneurship and Technology. The programme is delivered entirely in the school's virtual campus, accessible through an online app. "We need to think about the next generation who will grow up in the metaverse," Stöttinger says. "Eventually, ▶

'The pandemic has shown us the possibilities and the speed with which we can innovate'



it will be a must for us to be there. This investment makes us future-proof."

Institutions see the metaverse as a way for students to interact more meaningfully, but also as a platform to create business opportunities.

At Essca School of Management in France, students on the MSc International Business 4.0 programme create their own avatar in Second Life, the long-established 3D online world, and spend time observing how other avatars behave. Each student then identifies a potential commercial opportunity for a luxury brand in the metaverse, such as selling digital goods, and creates a virtual prototype.

"We need to prepare our students to be ready for the future," says Orsolya Sadik-Rozsnyai, head of the Essca online campus, noting that luxury houses are exploring business opportunities around virtual goods and non-fungible tokens.

For business schools, she says, the challenge is avoiding using technology for technology's sake. "The metaverse could be the next iteration of the internet, but, until we find the right use cases, it will remain a fantasy," she argues.

In spite of the metaverse's exciting possibilities, business schools remain a long way from realising its full potential, says David Lefevre, professor of practice in digital innovation at London's Imperial College Business School. "It's a fantastically beguiling idea of an alternative universe that we inhabit, but the metaverse at the moment is more of an aspiration," he says.

Key challenges include ensuring interoperability, which would enable students to move freely between different virtual worlds. High energy consumption is also a concern. "The resources required to operate the virtual environment, whether in the cloud or locally, are considerable," says Tamim Elbasha, associate dean of learning and quality development at France's Audencia Business School.

Roselva Tunstall, director of the edtech lab at ESMT Berlin, raises further doubts. "Digital accessibility is a challenge," she says, pointing out that virtual reality can be expensive and can also cause motion sickness. Faculty and staff would also require training in order to deliver classes using these tools, she adds.

Other schools cite data privacy and protection concerns as barriers to bringing business education into the metaverse. In any case, Tunstall says it is unlikely to supplant traditional teaching methods. "The metaverse is not meant to replace, it's meant to enhance."

'It's a beguiling idea of an alternative universe but the metaverse at the moment is more of an aspiration'


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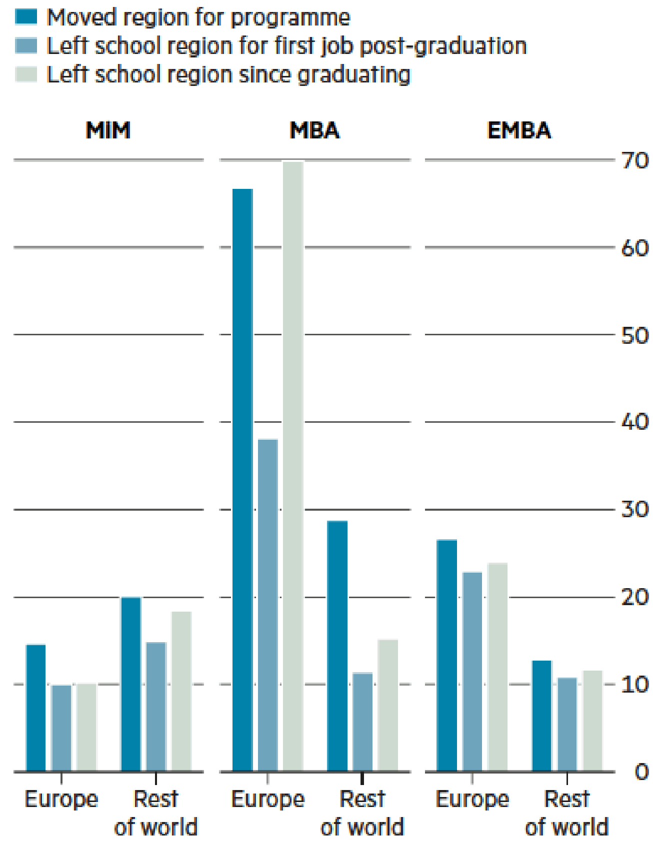
Continental shift: student journeys

From international student mobility to money, motivations and diversity, business education data specialists delve into the European Business School Ranking. The FT team compare survey data for Europe vs the rest of the world for masters in management (MiM), MBA and executive MBA (EMBA). Numbered notes, above right, expand on information in the charts

BY **SAM STEPHENS** AND **LEO CREMONEZI** GRAPHICS BY **CHRIS CAMPBELL**

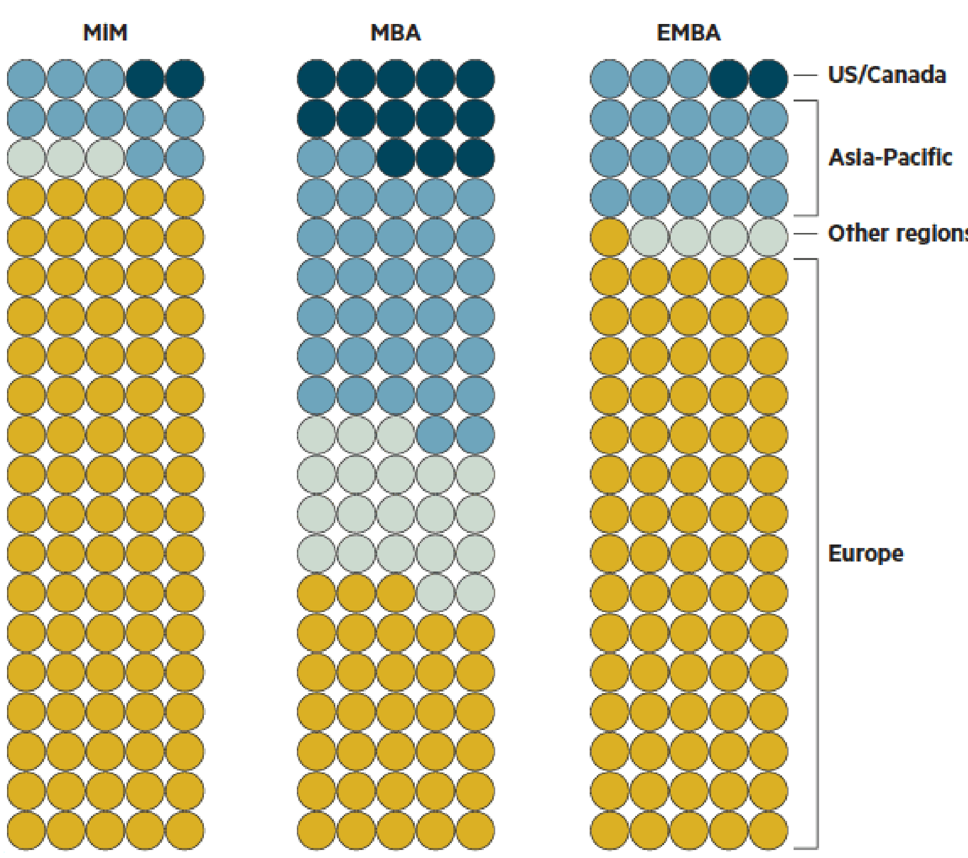
2 GLOBAL MOBILITY

European schools vs rest of world: alumni who moved region (%)*



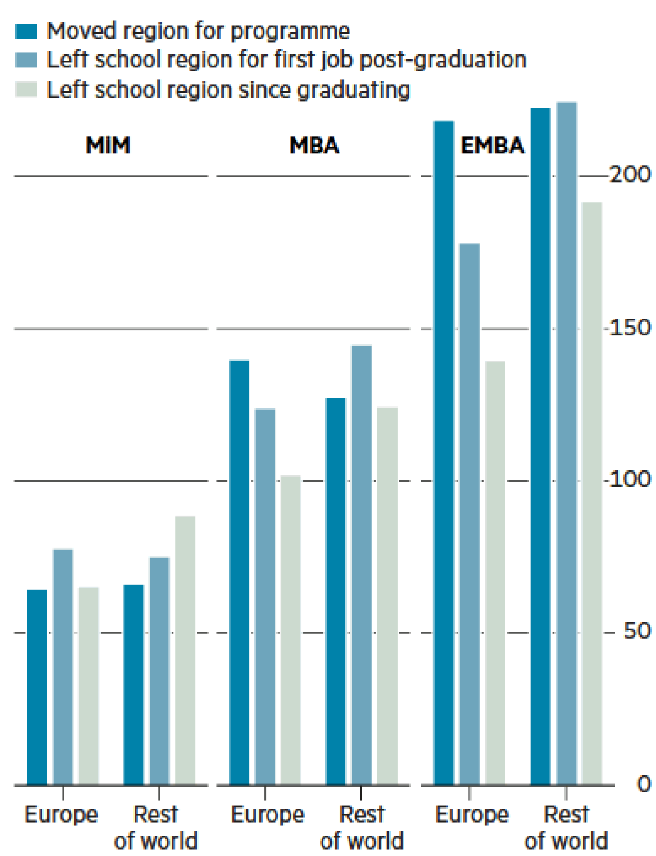
1 INTERNATIONAL STUDENTS

Percentage of foreign students at European business schools, by region of origin (dot = 1%)



3 MOVES AND MONEY

Salaries of European school and other alumni who relocated (avg, $ '000)*



1 The proportion of international students at European business schools differs widely between degrees. MBA cohorts are the most mixed while many foreign masters in management (MiM) and executive MBA (EMBA) students are from other European countries. Those from the Asia-Pacific region make up the next largest group.

2 More than two thirds of alumni who studied for an MBA in Europe — including European nationals — had lived outside the continent before their degree programme. Even more left Europe in the three years after graduating. MBA graduates who studied outside Europe were much less internationally mobile. MiM and EMBA alumni are less likely to move regions for study or work.

3 MBA and EMBA alumni who studied in Europe then moved region after graduating earned higher average salaries than those who stayed on. This is especially true for EMBA graduates, with alumni who studied in Europe then moved regions earning, on average, $80,000 more than those who stayed on. MiM alumni who studied in Europe have similar salaries wherever they now work.

4 Alumni tend to have lower average salaries when they have changed employers multiple times in the three years since completing their course — except EMBA graduates studying in Europe. (NB, alumni who changed employers three or more times saw larger increases after graduating, despite still having the lowest average salaries.)

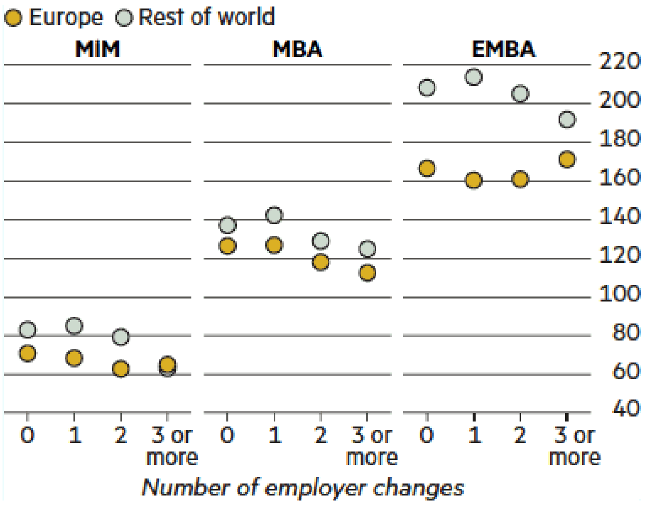
5 Management development and better earnings are the main reasons alumni of European schools studied. Work overseas was also highly rated among MBA graduates from European schools.

6 MBAs in Europe have more international students than schools in other regions.

Alumni surveyed for 2022 rankings, three years after completing their programme

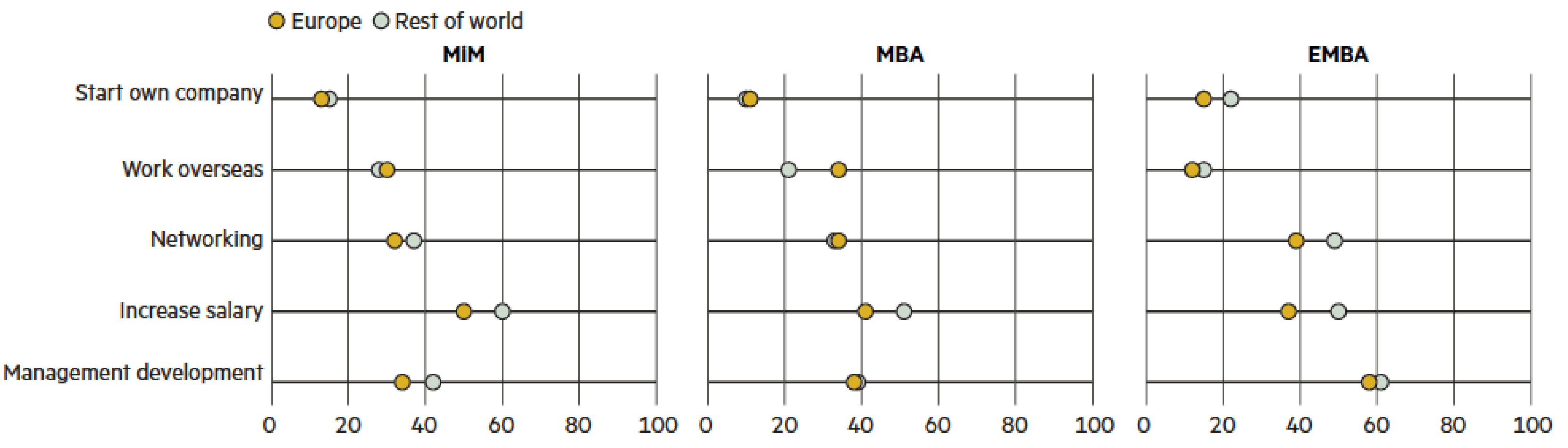
4 SWITCHING EMPLOYERS

More alumni job moves do not deliver the biggest salaries (Avg, $ '000)*



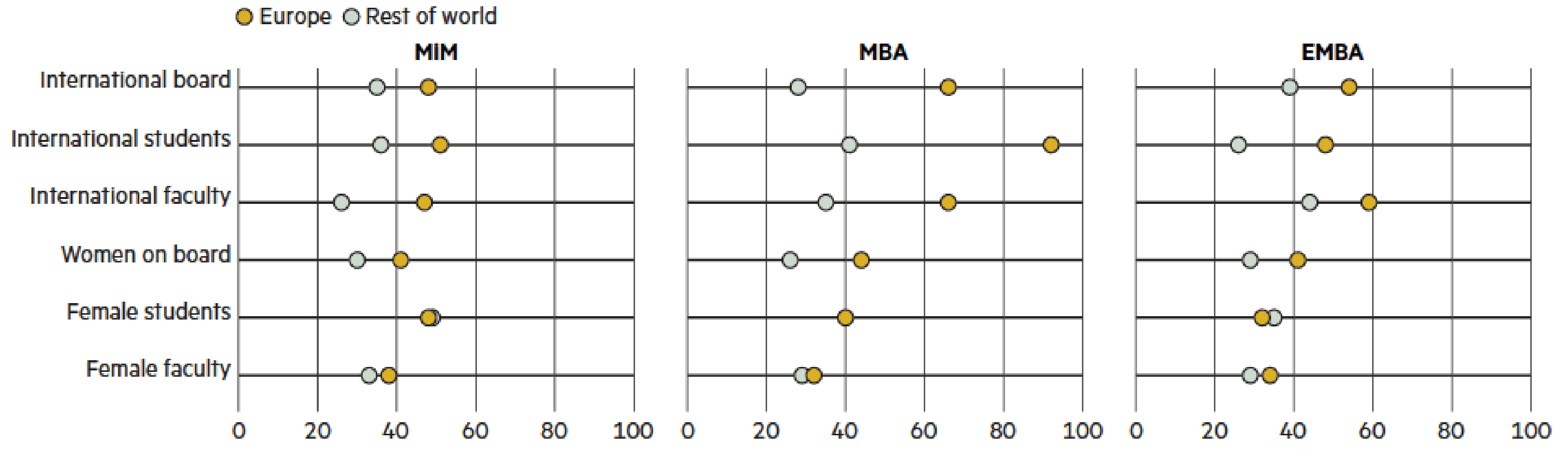
5 WHY GO TO BUSINESS SCHOOL?

Percentage of business masters alumni rating selected motivations for study at 10 out of 10*



6 EUROPEAN SCHOOLS ARE MORE DIVERSE

Breakdown of international and female students, faculty and board (average, %)



Leading the charge in the energy transition

As the long-term shift from fossil fuels creates high demand for managers with expertise in sustainability, business schools are responding with new programmes

BY **SEB MURRAY** PORTRAIT BY **MAGALI DELPORTE**



Winds of change Pierre Arnal's MSc took him to TotalEnergies, where he works in renewables

Pierre Arnal chose a career in the energy industry because he wanted to help accelerate the green transition. "We are being very slow to react to climate change," says the business graduate. "I want to be able to tell myself in 20-30 years I have been doing something with a minimum impact on the climate."

Arnal, who is French, felt a specialist degree was the way to break into the sector at what he felt was a fascinating moment in its evolution. So he enrolled on the 2020-21 MSc in Energy Management at ESCP Business School. On the programme, based in the UK and Paris, he gained a holistic view of the global energy system and project finance for renewable energy.

When he graduated, Arnal parlayed his knowledge and skills into an energy career. He joined the French group TotalEnergies last year after an internship there as part of his degree. Based in Paris, he now works as a junior offshore wind business developer, helping to prepare tenders.

Like many business students, at times he felt conflicted about energy groups whose businesses are rooted in fossil fuels. "There are some companies I blacklisted because I didn't trust what they were doing; I thought they were greenwashing," Arnal says. "However, being able to work in TotalEnergies and seeing the change that is happening, and the enormous sums of money the company is spending on renewables, helped me change my mind."

Business schools across Europe are creating masters programmes in energy to educate the next generation of managers who will lead the green transition. The new courses come as Europe faces an energy crisis. Oil, gas and coal imports from Russia have been cut because of sanctions over its invasion of Ukraine, pushing the European economy to the brink of recession. Governments in the EU plan to spend tens of billions of euros on fossil-fuel infrastructure and supplies this winter, to cushion households and businesses from soaring energy prices.

"Providing reliable, affordable and sustainable energy is essential for economic stability and growth, yet the energy industry faces the dual challenge of meeting demands today while shifting to renewable sources for the future," says David Elmes, professor of practice at Warwick Business School in the UK.

Degree programmes are not immune to market forces, though. Warwick launched its Global Energy MBA in 2009, but stopped recruiting into the programme in 2015 when the oil price crash reduced enrolment. In 2017, the modules were merged into the school's other MBA programmes.

Warwick also offers an elective called "Managing the Sustainable Energy Transition" in its various MBA programmes. Demand is so high that the course will run twice in the 2022-23 academic year. "It's attracting a broader mix of people from the construction, automotive and heavy industrial companies as they set strategies to reduce their carbon emissions," Elmes says.

Similar programmes are rising fast in popularity as applicants rush to join a sector seen as critical in the race to net zero. The class for ESCP's MSc in Energy Management is 44 per cent bigger than last year. "We saw a huge increase in the number of applications, because more students are now interested in the energy transition because of the climate crisis," says Georgia Makridou, academic director of the programme. The school has overhauled curricula to meet the sector's changing priorities, adding more green content.



The complex nature of the energy system means many business schools are having to draw on their university's expertise to deliver a multidisciplinary curriculum.

The Advanced Master in Energy Transition Marketing and Management is offered jointly by France's Grenoble Ecole de Management and Ense³, an engineering school that specialises in energy, water and the environment. "Before you can think about business models and strategy, you have to first master the technical basics — yet business schools do not have this expertise on the faculty," says GEM's Fabrice Arroyo, director of the programme.

Schools say a growing number of students on these programmes are oil and gas workers seeking to move into the renewables sector, underscoring the recruitment challenge big energy groups face. Many have set out long-term strategies to become green businesses, but the transformation will take a great deal of human capital — if they can attract the employees.

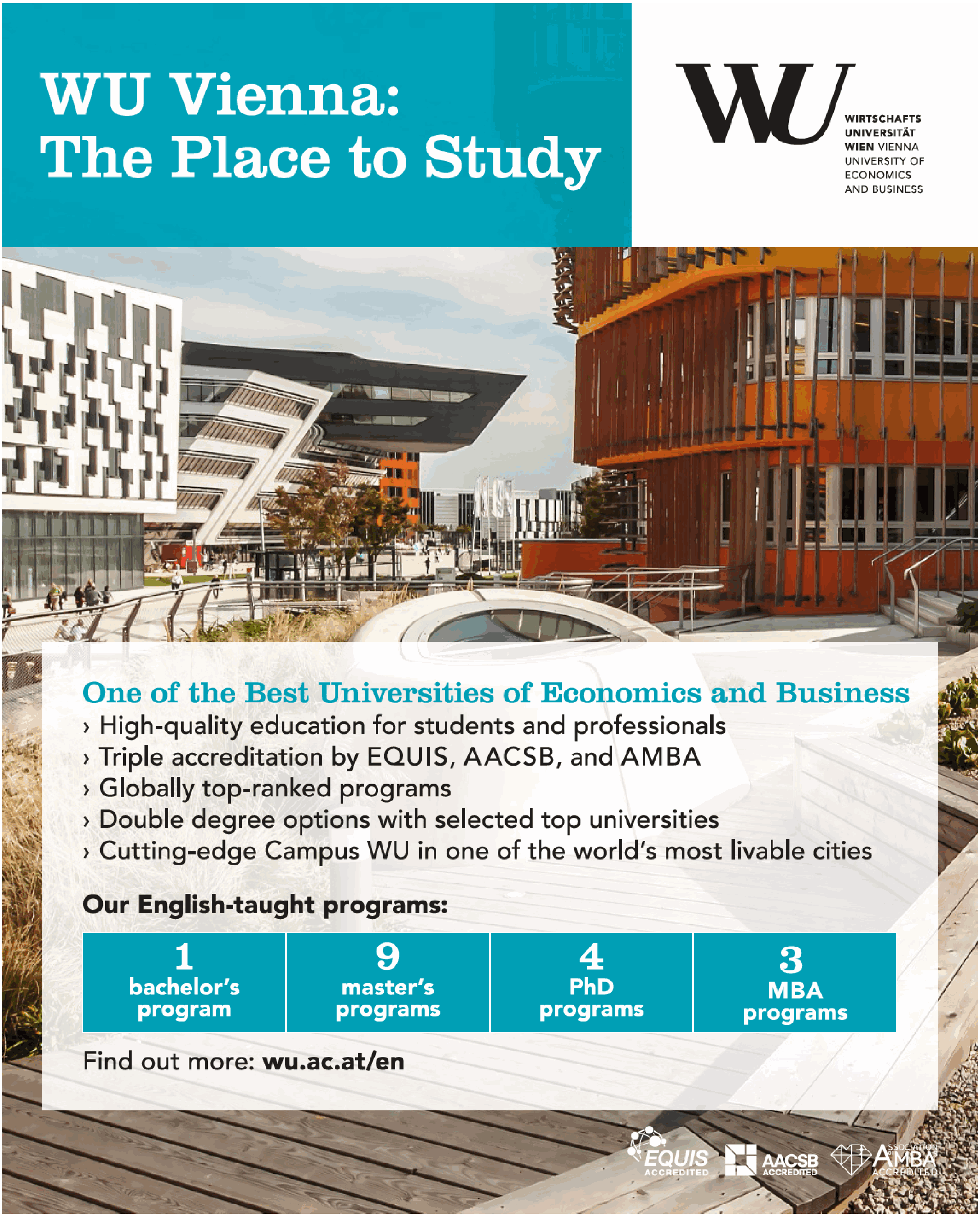
'Business students have a conscience. There is a huge drive towards a job that has a purpose, not just a profit'

"When you talk to the big fossil fuel companies, like BP, they are desperately keen for people who understand renewables as they know they have to get into it, yet their heritage and workforce are steeped in the fossil fuel environment," says Joanna Berry, co-director of a new MSc in Energy Engineering Management. The programme will be launched jointly next September by the business school and department of engineering at the UK's Durham University.

High pay is not enough to attract business students, Berry adds. "They have a conscience," she says. "There is a huge drive towards a job that has a purpose, not just a profit. That balance has never been more obvious to me in the student body we have. Our students are different creatures to what they were a decade ago."

And graduates can pick and choose the jobs they want, according to Xavier Blot, director of the Specialised Master in Energy Transition Management at EMLyon Business School in France, delivered jointly with the ECAM Lyon engineering school. He says demand for green skills exceeds supply across a range of employers, from investment and consultancy businesses to non-governmental organisations.

"Like natural resources, competent people are scarce," Blot explains. "The incoming flow of skilled talent into the industry is tiny compared with the market need. So, we really need to increase supply."


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Teaching how to tackle the biggest problems

Business schools should put environmental and societal issues at the core of their work, says **Julian Birkinshaw**

Business schools play an important role in the business world, shaping the world view of the next generation of leaders and sharpening the thinking of top executives and policymakers through their research. So, with the corporate world showing growing concern for sustainability and climate change, it is appropriate to ask: what are business schools doing to contribute to this agenda?

The answer is that they should be putting purpose and problem-solving at the heart of their teaching, so future business leaders are equipped to tackle society's greatest challenges. This is the conclusion of a recent British Academy initiative I co-chaired with Professor Colin Mayer at the University of Oxford's Saïd Business School, which concluded with the report Teaching Purposeful Business in UK Business Schools, published in November.

A central message of the report is that society faces a number of almost intractable challenges, including climate change, resource shortages, inequalities within and between countries and geopolitical fragmentation. Companies have long been seen as part of the problem, but have woken up to the chance to become a force for good. Most have made net zero pledges on carbon, and many have made commitments to the UN Sustainable Development Goals. Balancing the needs of people, planet and profit is now part of the agenda in corporate boardrooms everywhere.

Another core theme of the report is that students learn best by applying their knowledge to real-world problems. Working towards a business degree will always involve factual information acquired through reading, listening and classroom-based discussion. But it should be complemented with experiential learning — the cycle of experimentation, evidence-gathering and reflection through which deep insight and expertise are achieved.

Business schools should develop activities that allow students to apply academic insight to practical challenges faced by corporate executives, investors and entrepreneurs as they seek to solve the problem of people and planet in a profitable way. This approach is good for students' professional development and for society more generally.

Many schools have already made progress towards this action-oriented approach to learning, but with activities often seen as peripheral to the mainstream academic curriculum. We need to put solving societal problems at the heart of the agenda with three key approaches.

First, we must revisit the assumptions underlying business theory. For example, most courses on finance or strategy assume the chief executive's primary responsibility is to maximise profits for shareholders. There is still a tendency to treat the broader stakeholder perspective as a supplementary idea and to teach the "fundamentals" through a lens of shareholder primacy.

We need to review curricula to ensure such assumptions are opened for debate, rather than presented as indisputable axioms. We recommend offering students a greater breadth of courses than is usual, to provide a richer perspective on the role of business in society and to enhance critical thinking skills.

Second, we need to restructure approaches to student learning. Executives rarely operate in functional silos, and the challenges they face cannot be addressed through a single academic discipline. Tackling a complex problem, such as how to reduce a company's carbon footprint while growing sales in an increasingly competitive market, needs a different perspective.

An exciting shift would be to make problem-solving the "orienting device" through which students learn. Several business and management schools featured in the British Academy report have built courses, or entire programmes, in this way — for example, around societal "grand challenges" or corporate challenges in diversity and inclusion or sustainability.

This problem-solving perspective does not have to be entirely driven from the top. We have seen many examples of entrepreneurial student-led initiatives, from field trips to workshops to extracurricular courses, helping to fill the gap.

Third, business and management schools should collaborate to build greater legitimacy for the sustainability agenda. Initiatives under way include the UN Principles for Responsible Management Education, the AACSB accreditation agency's sustainability targets, and the FT's Responsible Business Education awards. Subscribing to such initiatives helps reinforce the change agenda they embrace.

Why hasn't all this happened sooner? Compared with many other academic departments, business and management schools have experienced a surge in student numbers, which has given them a licence to keep doing things as before. But the trend is shifting, not just because belts are tightening but because the business agenda is shifting. There is an opportunity for ambitious and progressive business schools to gain advantage by moving quickly. And there is scope for the entire system to move with the times, to help business education become a force for good in the business world.

Julian Birkinshaw is vice-dean of London Business School



PHOTO: GETTY IMAGES/WESTEND61

ESCP BUSINESS SCHOOL

IT ALL STARTED WITH **A CHOICE** TO...



"... create a podcast that raises awareness of sustainability among business leaders.

Jade Plancke & Rebecca Ruff
Bachelor Students

"... build a platform to give free access to business education on climate and energy.

Pierre Peyretou
Alumnus & Affiliate Professor

"... take a gap year to cycle across Europe to meet actors of the ecological transition.

Roman Petibon
MiM Student

BECAUSE OUR WORLD CAN'T WAIT, **ESCP EDUCATES PURPOSE-DRIVEN LEADERS** WHO CHOOSE TO ACT FROM DAY ONE OF THEIR STUDIES.

IT ALL STARTS HERE

BERLIN I LONDON I MADRID I PARIS I TURIN I WARSAW



Top of the table Students at HEC Paris, which heads the ranking for a record 11th time

European Business Schools Ranking 2022

PHOTO: HEC

RANKINGS

The tables p24
The top 95 schools, notes and profiles

Key p27
Plus methodology on p28



Top school
HEC Paris

HEC Paris is the top European business school for the fourth consecutive year. The school owes its success in this composite table to its good performance in the constituent FT rankings this year. As well as achieving steady alumni salary increases and top spot in both the Open and Custom Executive Education tables, the school was ranked second in Europe in the Masters in Management table, second for EMBAs and fourth for MBAs. **TATJANA MITEVSKA**



Highest riser
Rennes School of Business

Returning to form, Rennes climbs 31 places to 57th in this ranking. The French school's success is partly due to its return to the Masters in Management table, ranking 41st in Europe. MiM alumni had an average salary of $64,849 and a pay increase of 45 per cent between completing the course and three years on. It was also in the MiM top three for international course experience, based on students taking part in overseas exchanges and internships lasting at least a month. **LEO CREMONEZI**

PHOTOS: MAG

FT EUROPEAN BUSINESS SCHOOLS 2022

The top 95 *(continued overleaf)*

Rank in 2022	Rank in 2021	Rank in 2020	Three-year average rank	School name	Location (main campus)	MBA: European rank	MBA: Salary today (US$)	MBA: Salary increase (%)*
FT ranking tier I				*(see tier and table notes, p25)*				
1	1	1	1	HEC Paris	France	4	165,558	124
2	2	2	2	London Business School	UK	2	174,106	99
3	14	8	8	ESCP Business School	France/Germany/Italy/Poland/Spain/UK	13	118,273	72
4	5	5	5	SDA Bocconi/Università Bocconi	Italy	5	174,967	122
5	6	7	6	University of St Gallen	Switzerland	20	133,749	57
6	4	4	5	Iese Business School	Spain/US	3	163,780	124
7	10	14	10	Edhec Business School	France	18	120,110	57
8	7	9	8	ESMT Berlin	Germany	23	118,110	58
9	8	6	8	Essec Business School	France	15	117,754	79
10	12	12	11	IE Business School	Spain	11	142,118	84
FT ranking tier II				*(see tier and table notes, p25)*				
11	10	10	10	IMD	Switzerland	7	164,192	66
12	19	20	17	EMLyon Business School	France	24	99,987	55
13	20	19	17	WHU — Otto Beisheim School of Management	Germany	19	117,488	88
14	17	15	15	Rotterdam School of Management, Erasmus University	Netherlands	22	112,881	63
15	3	3	7	Insead	France/Singapore/UAE	1	186,784	93
16	18	15	16	Warwick Business School	UK	14	129,191	60
17	13	12	14	Esade Business School	Spain	9	136,175	99
18	15	17	17	University of Cambridge: Judge	UK	6	165,667	96
19	16	18	18	Imperial College Business School	UK	9	138,865	86
20	22	21	21	Stockholm School of Economics	Sweden			
21	21	21	21	Mannheim Business School/University of Mannheim	Germany	17	129,606	72
22	28	23	24	University College Dublin: Smurfit	Ireland	27*	99,257	70
23	39	24	29	Vlerick Business School	Belgium	37*	98,701	63
24	27	26	26	Nova School of Business and Economics	Portugal	41* **	104,222	67
25	9	10	15	University of Oxford: Saïd	UK	8	150,226	81
26	24	26	25	Frankfurt School of Finance and Management	Germany	32*	90,902	51
27=	25	29	27	Eada Business School Barcelona	Spain	28*	106,497	84
27=	29	31	29	Católica Lisbon School of Business and Economics	Portugal	41* **	104,222	67
29	23	25	26	City, University of London: Bayes (formerly Cass)	UK	16	132,782	76
30	58	58	49	IBS-Moscow Ranepa	Russia			
31	37	41	36	Politecnico di Milano School of Management	Italy	25	94,642	94
32	49	-	-	Moscow School of Management Skolkovo	Russia			

FT European Business Schools composite ranking: table notes and tiers

(for methodology see page 28)

This composite ranking is based on the combined performance of Europe's leading business schools across the five main rankings of programmes published by the FT in 2022. Some 151 points separate the top programme, at HEC Paris, from the school ranked 95. The schools are divided into four tiers. Business schools in tiers I and II score above the average for the cohort, and tiers III and IV are below it. The difference in scores between schools ranked consecutively is greater within tiers I and IV than in tiers II and III. Tier I includes 10 schools from HEC Paris down to IE Business School. Tier II includes schools from IMD Business School, ranked 11th, to Antwerp Management School in 49th position. Tier III, headed by HHL Leipzig Graduate School of Management spans schools ranked 50 to 85. Tier IV includes schools from Tilburg University, School of Economics and Management in joint 86th place to University of Glasgow: Adam Smith in 95th.

Figure in brackets refers to data from separate joint programme for schools with more than one degree ranked.

† Salary increase in three years from completion to now for Masters in Management. For MBA and EMBA, the average difference in alumni salary is between before the degree and now, three years after completion.

‡ Faculty data are provided for information — taken from surveys for the 2022 MIM, MBA and EMBA tables. Hult EF Corporate Education only featured in Executive Education and has provided faculty data, as of October 2022.

* School was ranked outside the final table in 2022 for MBA, Executive Education, EMBA or Masters in Management.

** School participated in this ranking on the basis of a joint programme only. Underlying score based on proportion of total score.

FT ranking tier (see table notes above)

I II III IV

EMBA#			Masters in Management#			Executive Education		Faculty‡				FT ranking tier
European rank	Salary today (US$)	Salary increase (%)†	European rank	Salary today (US$)	Salary increase (%)†	Open programmes	Custom programmes	Female faculty (%)	International faculty (%)	Faculty with doctorate (%)	Rank in 2022	See table notes, above
2 (4)	342,273 (384,089)	76 (51)	2	118,999	77	1	1	30	63	96	1	I
10	275,652	61	7	103,489	53	5	8	31	84	99	2	I
3	311,444	74	5	95,742	52	15	10	39	86	100	3	I
17	243,033	56	18	85,748	61	9	3	40	45	99	4	I
16	225,586	65	1	138,091	62	6	17	24	83	100	5	I
5	350,394	41				3	2	30	97	100	6	I
27	181,049	68	11	95,341	59	11	5	32	64	98	7	I
23	214,363	50	10	97,462	46	10	9	28	76	100	8	I
12**	210,130	63	6	96,988	52	8	4	36	71	100	9	I
6	321,883	51	16	85,331	64	13		50	72	100	10	I
12	264,340	49				2	6	20	98	100	11	II
26	183,322	59	9	96,487	58	27	11	41	65	99	12	II
8**	261,870	75	13	118,385	46	11	34	37	32	100	13	II
32	148,847	59	3	101,961	61	25	31	28	57	100	14	II
9 (1)	323,781 (399,462)	45 (59)						22	89	99	15	II
17	184,867	65	24	69,310	95	33	22	43	81	100	16	II
			15 (29)	97,485 (93,931)	39 (58)	4	7	40	46	100	17	II
19	228,714	61				18	21	20	84	98	18	II
11	212,130	68	20	84,886	59			27	96	100	19	II
31	162,005	53	4	92,235	56	6	16	34	49	97	20	II
41 (12)	194,462 (210,130)	34 (63)	21	106,876	40		24	32	29	100	21	II
39	165,522	64	8	93,510	62	22		32	43	99	22	II
38	172,009	68	35	72,087	56	20	14	31	36	100	23	II
47**	134,394	55	14	80,729	56	16	19	35	37	100	24	II
7	285,302	73						21	69	100	25	II
34	175,887	55	33	101,573	35	37	38	21	32	100	26	II
56*	93,958	51	29	77,611	61	19	32	33	56	89	27=	II
47**	134,394	55	25	70,859	64	29	12	47	38	100	27=	II
29	182,695	53	42	64,132	47			33	82	95	29	II
21	325,831	70	11	96,173	106			50	23	98	30	II
54	140,530	59	63	62,989	59	39	33	42	10	87	31	II
28	441,034	57				26	13	23	13	77	32	II



Highest new entry
ISEG — Lisbon School of Economics and Management

The Portuguese school is the highest new entrant at 65. ISEG's rise reflects its appearance in some rankings for the first time this year. One of these is the EMBA, with alumni reporting that the programme helped them develop personally and professionally. ISEG featured for the first time in the global custom and open-enrolment course rankings (short programmes for executives), placed 27th and 35th respectively in Europe.
SAM STEPHENS



Top in Scandinavia
Stockholm School of Economics

The Swedish school rose two places to 20th in this table due to improved performance in various categories in the executive MBA and Masters in Management rankings. These included career progression, measuring changes in the level of seniority, and the size of the organisations for which alumni work. SSE is fourth in Europe for masters in management and 31st for the EMBA. "The MBA has given me a great toolkit for future growth as a leader," said one graduate surveyed for the ranking.
LEO CREMONEZI

PHOTOS:

FT EUROPEAN BUSINESS SCHOOLS 2022
The top 95 *(continued)*

						MBA		
Rank in 2022	Rank in 2021	Rank in 2020	Three-year average rank	School name	Location (main campus)	European rank	Salary today (US$)	Salary increase (%)†
33	30	32	32	Tias Business School, Tilburg University	Netherlands	43*	89,819	37
34	38	37	36	Aalto University	Finland			
35	34	38	36	Henley Business School	UK			
36	26	30	31	Copenhagen Business School	Denmark	30*	94,082	38
37	32	56	42	Trinity College Dublin, Trinity Business School	Ireland	34*	110,979	33
38	31	45	38	Audencia	France	38*	67,073	54
39	40	34	38	Kedge Business School	France			
40	36	28	35	Grenoble Ecole de Management	France	32*	100,048	51
41	44	39	41	Neoma Business School	France			
42	61	58	54	Koç University Graduate School of Business	Turkey			
43	41	34	39	WU (Vienna University of Economics and Business)	Austria			
44	57	51	51	St Petersburg University, Graduate School of Management	Russia			
45=	41	41	42	Nyenrode Business Universiteit	Netherlands	35*	82,421	56
45=	51	40	45	HEC Lausanne, University of Lausanne	Switzerland			
45=	55	62	54	NHH Norwegian School of Economics	Norway			
48	50	49	49	BI Norwegian Business School	Norway			
49	46	41	45	Antwerp Management School	Belgium			
FT ranking tier III				*(see tier and table notes, p25)*				
50	60	45	52	HHL Leipzig Graduate School of Management	Germany	30*	91,822	93
51	33	36	40	Alliance Manchester Business School	UK	12	128,529	94
52=	46	44	47	Hult EF Corporate Education	UK			
52=	54	45	50	Kozminski University	Poland			
54	43	54	50	Lancaster University Management School	UK	20	110,094	112
55	58	58	57	TBS Education	France			
56	34	32	41	Cranfield School of Management	UK	40*	101,090	42
57	88	68	71	Rennes School of Business	France			
58	48	-	-	Skema Business School	France			
59	66	79	68	University of Porto — FEP | PBS	Portugal			
60	69	69	66	University of Zurich	Switzerland			
61	64	63	63	Excelia Business School	France			
62	55	50	56	Prague University of Economics and Business	Czech Republic			

Key (weights for ranking criteria in the overall European Business School Ranking are shown in brackets as a percentage)

The European Business Schools ranking is based on the overall scores each school achieved for each ranking in which it features, such as MBA, EMBA, Executive Education and Masters in Management. The composite ranking is not solely based on the data displayed in the European schools table.

MBA

EUROPEAN RANK (25): position among European schools that took part in the 2022 FT global MBA ranking.
SALARY TODAY ($): average alumni salary three years after completion, US$ by purchasing power parity (PPP). Includes weighted data from the current and two previous years, where available.
SALARY INCREASE (%): average difference in alumni salary between pre-MBA and now, three years after completion.

EMBA

EUROPEAN RANK (25): position among European schools that took part in the 2022 EMBA ranking.
SALARY TODAY ($): average alumni salary three years after completion, US$ PPP. Includes weighted data from the current and two previous years, where available.
SALARY INCREASE (%): average difference in alumni salary between pre-EMBA and now, three years after completion.

Masters in Management

EUROPEAN RANK (25): position among European schools that participated in the 2022 FT MiM ranking.
SALARY TODAY ($): average alumni salary three years after completion, US$ PPP. Includes weighted data from current and two previous years, where available.
SALARY INCREASE (%): average difference in alumni salary between completion and now, three years after completion.

Executive Education

OPEN PROGRAMMES (12.5): position among European schools that participated in the FT ranking of open-enrolment programmes in 2022.
CUSTOM PROGRAMMES (12.5): position among European schools that participated in the FT ranking of customised programmes in 2022.

Faculty

FEMALE FACULTY: percentage of female full-time faculty.
INTERNATIONAL FACULTY: percentage of full-time faculty whose citizenship differs from country of employment.
FACULTY WITH DOCTORATES: percentage of full-time faculty with a doctoral degree.

EMBA#			Masters in Management#			Executive Education		Faculty‡				FT ranking tier
European rank	Salary today (US$)	Salary increase (%)†	European rank	Salary today (US$)	Salary increase (%)†	Open programmes	Custom programmes	Female faculty (%)	International faculty (%)	Faculty with doctorate (%)	Rank in 2022	See table notes, p25
45	151,130	49	61	59,649	32	38	36	29	42	96	33	II
49	149,860	38	50	70,790	44	31	23	34	33	98	34	
37	164,070	45	76*	40,481	28	14	18	47	61	92	35	
34	181,430	42	37	78,831	43			34	48	96	36	
36	166,436	55	34	72,739	61			44	60	100	37	
55	117,633	35	39 (38)	75,930 (50,242)	44 (63)	27		47	58	98	38	
22	192,898	73				30	29	40	46	99	39	
			32	70,648	62	36	37	50	56	91	40	
43	130,463	35	28	73,424	42		29	45	95	100	41	
15	328,526	76					26	50	29	94	42	
20**	221,541	53	25	88,610	30			42	38	97	43	
44	191,052	66	19	79,569	112			50	9	91	44	
			64	71,970	54	23	40	33	24	98	45=	
40	165,585	45	27	81,110	58			27	85	100	45=	
56*	134,031	21	74	70,127	31	20	39	30	41	98	45=	
46 (25)	137,284 (239,892)	38 (93)				32	41	30	35	81	48	
30	251,055	52	55	64,994	41			36	21	95	49	
			17	126,767	55			24	19	100	50	III
			68	59,862	46			31	57	95	51	
						17	15	37	65	69	52=	
24	236,050	79				40		39	17	89	52=	
52	112,709	52						34	64	98	54	
41	124,463	35	42	65,475	34			49	55	98	55	
53	122,232	37				24		37	56	96	56	
50	102,854	46	41	64,849	45			35	88	97	57	
			36	73,224	44		20	37	63	98	58	
59*	118,440	51				34	28	48	3	93	59	
33	191,204	54						15	85	100	60	
			31	74,250	42		35	50	69	90	61	
			22	75,001	38			41	25	86	62	

Methodology

How the ranking was compiled

This is the 19th annual Financial Times ranking of European business schools. It is a composite ranking based on the combined performance of Europe's leading schools across the five main rankings of programmes published by the FT in 2022: MBA, Executive MBA, Masters in Management (MiM) and the two rankings of non-degree executive education programmes. The Online MBA and Masters in Finance rankings are not included.

The European school rank is calculated after removing non-European schools from each of these main rankings. MBA, EMBA and MiM account for 25 per cent each of each school's total performance. For Executive Education, the scores obtained for customised and open programmes each account for 12.5 per cent. Schools must have a minimum total weight of 25 out of a possible 100 for all five rankings to be eligible.

Schools ranked with a joint programme receive a proportional share of the programme's indexed score. For example, Essec gets 50 per cent of the score achieved by its joint EMBA programme with Mannheim — worth 12.5 per cent of the possible 100 total weight.

The ranking measures the schools' quality and breadth of programmes. Quality is given a greater emphasis so that schools offering high-quality training but not providing all the different courses considered can still perform strongly overall.

An indexed score is created for each ranking. These scores are then added together, according to the weighting above, creating a combined total for each school, which comprises one third of the final score. The remaining two-thirds is an average score, derived by dividing the total score for each school by the number of rankings in which it features.

Scores are not simply based on aggregation of published ranking positions. They are calculated using Z-scores — formulas that reflect the range between the top and bottom school — for the individual criteria that make up each component ranking.

FT EUROPEAN BUSINESS SCHOOLS 2022

The top 95 *(continued)*

Rank in 2022	Rank in 2021	Rank in 2020	Three-year average rank	School name	Location (main campus)	MBA: European rank	MBA: Salary today (US$)	MBA: Salary increase (%)*
63=	52	51	55	University of Edinburgh Business School	UK	29*	109,686	49
63=	62	55	60	Iéseg School of Management	France			
65	-	-	-	ISEG — Lisbon School of Economics and Management	Portugal			
66	45	48	53	Durham University Business School	UK	26	101,326	75
67	77	-	-	Iscte Business School	Portugal			
68	67	63	66	Sabanci Business School	Turkey			
69	84	82	78	University of Ljubljana, School of Economics and Business	Slovenia			
70	78	70	73	Solvay Brussels School of Economics and Management	Belgium			
71	70	-	-	Tum School of Management	Germany			
72=	53	51	59	University of Strathclyde Business School	UK			
72=	86	83	80	Louvain School of Management, UCLouvain	Belgium			
72=	90	85	82	Luiss University	Italy			
72=	-	75	-	University of Cologne	Germany			
76	75	72	74	MBS (Montpellier Business School)	France			
77	80	-	-	ICN Business School	France			
78	89	75	81	Lund University School of Economics and Management (Lusem)	Sweden			
79	-	70	-	Essca School of Management	France			
80=	75	75	77	Hanken School of Economics	Finland			
80=	82	80	81	Burgundy School of Business	France			
82=	79	58	73	IAE Aix-Marseille Graduate School of Management	France			
82=	83	73	79	ZHAW School of Management and Law	Switzerland			
84	84	73	80	Institut Mines-Télécom Business School	France			
85	86	83	85	EM Normandie Business School	France			
FT ranking tier IV				*(see tier and table notes, p25)*				
86=	70	63	73	Tilburg University, School of Economics and Management	Netherlands			
86=	-	-	-	Esdes Lyon Business School	France			
88=	92	81	87	EM Strasbourg Business School	France			
88=	95	-	-	Jönköping International Business School	Sweden			
90	-	-	-	Bologna Business School	Italy			
91	65	88	81	Birmingham Business School	UK	36*	96,566	51
92	93	-	-	University of Antwerp Faculty of Business and Economics	Belgium			
93	72	-	-	University of Exeter Business School	UK	44*	74,202	41
94	-	85	-	DCU Business School	Ireland			
95	68	85	83	University of Glasgow: Adam Smith	UK	38*	84,597	62

The following rules are specific to the FT composite European ranking:

Programmes ranked outside the published tables for MBA, Executive Education, Masters in Management and EMBA are taken into consideration. They are shown with an asterisk.

If a school has more than one programme in the same ranking, a combined weighted score is awarded. HEC Paris receives 33 per cent of the score achieved by the Trium Global EMBA and the remaining 67 per cent from its own single programme.

For business education rankings, including Global MBA, Executive MBA, Online MBA, Masters in Management, Executive Education and Masters in Finance, go to rankings.ft.com

Judith Pizer of Pizer-MacMillan acted as the FT's database consultant. The FT research rank was calculated using Clarivate Analytics data from the Web of Science, an abstract and citation database of research literature.

EMBA#			Masters in Management#			Executive Education		Faculty*				FT ranking tier
European rank	Salary today (US$)	Salary increase (%)†	European rank	Salary today (US$)	Salary increase (%)†	Open programmes	Custom programmes	Female faculty (%)	International faculty (%)	Faculty with doctorate (%)	Rank in 2022	See table notes, p25
			58	62,991	42			42	73	97	63=	III
			23	70,996	45			47	89	100	63=	
62*	91,666	47				35	27	38	16	95	65	
			71	53,620	46			34	81	98	66	
60*	111,936	34	61	60,519	64			50	13	99	67	
58*	147,223	19					25	34	26	100	68	
61*	99,517	43	65	63,365	81			52	5	75	69	
			54	67,273	45	41*	43*	32	36	95	70	
			39	102,545	34			33	27	100	71	
51	166,783	59						36	95	83	72=	
			45	75,109	54			30	12	100	72=	
			44	61,757	94			35	27	89	72=	
			45	97,547	26			19	8	100	72=	
			47	63,704	35			45	74	96	76	
			48	60,746	33			49	75	97	77	
			48	67,739	39			38	34	91	78	
			51	62,750	32			50	63	100	79	
			52	63,507	51			36	27	95	80=	
			52	60,827	45			50	51	93	80=	
			56	64,736	39			47	22	86	82=	
			57	82,606	37	43*		32	36	62	82=	
			59	61,036	25			50	56	98	84	
			60	61,998	33			39	57	100	85	
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PHOTO: ILJA C HENDEL

Blind tasting
Using aromas and virtual reality to make astronauts' food more appealing, page 38

INSIDE SCHOOL

Ideas lab p32
Biotech start-up founders juggle work and EMBAs

Beyond Brexit p36
UK schools after leaving the EU

Final frontier p38
Honing skills for the space economy

Bridging study and start-up

For Fengru Lin and Max Rye, parallel EMBAs offered a fertile environment to develop their biotech business — with a little help from classmates. By **Kate Hodge**

In 2018, Fengru Lin spent a couple of weeks in Vermont enjoying her hobby of cheesemaking. Little did she know how the trip to the north-eastern US would reshape her career: within two years, she had quit her job at Google and become the co-founder and chief executive of TurtleTree, a biotech company that aims to produce sustainable food.

Lin originally wanted to make cheese in Asia. But, in her hunt for fresh milk, she found that farming practices undermined her efforts. Her mozzarella would not stretch like it would in Vermont, says Lin, and she could see the milk lacked calcium. "That is what exposed me to food systems," she says, "how amazing they are — being able to support the billions of people on the planet — but also some of the weaknesses that we are seeing."

Later that year, entrepreneur Max Rye gave a talk about transformative technologies at Google's office in Singapore, where Lin worked. This sparked an initial conversation about the possibility of producing milk in the lab. "We started bouncing this idea off scientists, dairy companies and representatives of different food companies," says Lin. "For us, it was the door that kept opening. No one said, 'You are crazy', no one said, 'It is impossible'."

That idea developed into a focus on lactoferrin, a protein in milk they say has benefits for the immune system, gut health, digestion and regulation of iron. Lactoferrin is found in tiny quantities in milk and is resource-intensive to extract, so 80 per cent is used in high-value products such as baby formula. TurtleTree plans to produce it using precision fermentation techniques and make it more widely available.

By mid-2019, Lin says, TurtleTree had been set up and the scientists, now working for the company, had made their first "breakthroughs" and filed their first patents. She left Google and Rye relocated from California to Singapore.

Getting a business off the ground would be enough for most founders but, in 2020, both Lin and Rye embarked on an executive MBA run jointly by Essec in France and Mannheim University in Germany.

"We wanted to be on the same path," explains Lin, adding that the pair did not think of the programme as going to school, but rather as a supplement to what they were doing at work. They would have a coffee and discuss the lessons learnt and how they could be applied to the business.

Both Lin and Rye used TurtleTree in class projects, allowing them to make the most of their coursemates' collective wisdom. "We found a way in real time to involve our peers in our class to help work on our project, help solve some of our gaps and issues within our company," says Rye. "And it was just a wonderful environment because [classmates] also got a chance to dig into a start-up."

One lesson that both founders took away was a focus on creating value from their technology. Lin recalls a professor saying: "An invention is only an invention if there is a business behind it." This was "striking", she says, because it reinforced the notion that people and the planet would only benefit from the company's ideas if they derived value from them. Lin says she draws on this when talking to the TurtleTree team. "It is great we have an idea on paper. It is great we can run it in the lab. How do we scale it? How do we make it accessible to people? That is what creates impact." ▶

'It is great we have an idea on paper [but] how do we make it accessible? That is what creates impact'



On the same path Fengru Lin in San Francisco with Max Rye. The start-up has 45 employees in locations including California

PHOTOS: TURTLETREE





Clear message
Lin says explaining her technology to a business school professor was good preparation for presenting it to customers

CV

2014-15 Sales representative (Asean), Salesforce
2015-16 Business development (Singapore, Malaysia and Philippines), Salesforce
2016-18 Account executive (Salesforce Marketing Cloud), Salesforce
2018-19 Territory account manager (Google Cloud Platform), Google
2019 to present Chief executive and co-founder, TurtleTree

Even Rye — who spent 15 years as chief executive of an IT company — found this to be a valuable lesson. "I thought [turning an invention into innovation] was quite obvious already," he says. "But it really was not — there is a lot more to it and that had the biggest impact for me."

There were other tangible lessons. As part of the final project, Lin recalls, a professor struggled to understand the technology. "It was a good angle, from a layman's point of view, to think through what the end consumer is thinking," says Lin, noting that, in response, TurtleTree changed its messaging to avoid scientific and technical terms.

The business has so far raised about $40mn and has about 45 employees in Boston, California and Singapore, according to Lin, with regulatory approval in the US expected by the middle of next year and also sought in Singapore.

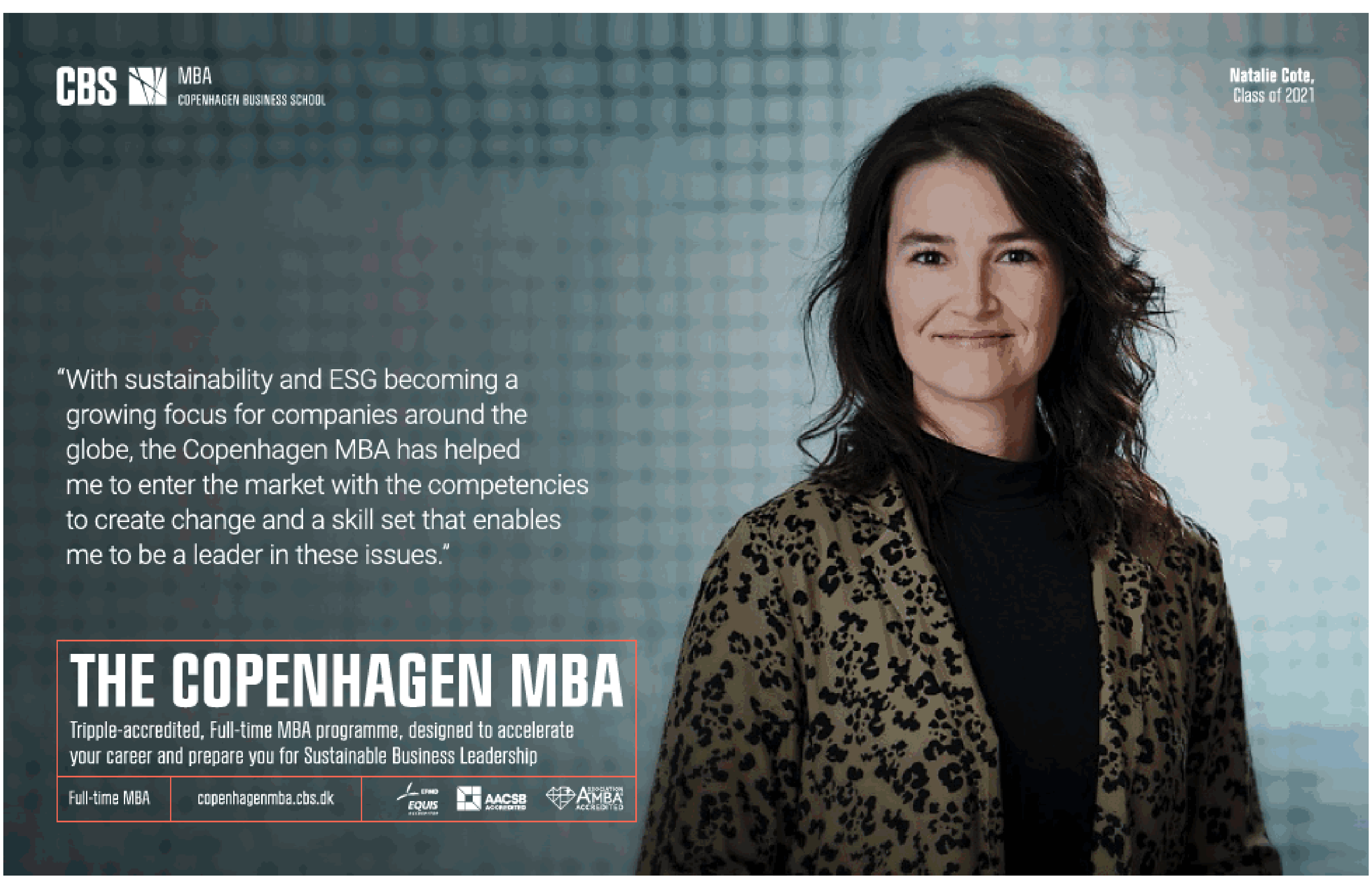
Lactoferrin is the first project, though others are in the pipeline. "This product is produced using precision fermentation," Lin says. "This is a technology where we are able to get microbes like yeast or fungi to ingest sugar and pump out animal proteins — like how an animal would — just without [it] having to go through the cow."

This process is more efficient in terms of the use of water, energy and land compared with extraction from milk, she says. TurtleTree wants to partner with big food and beverage companies, bringing the health benefits of more affordable and sustainable lactoferrin to products such as plant-based milks, kombucha and yoghurt.

Undertaking an EMBA while building a business was tough and the pair credit their leadership team with helping them through it. "You have to build a strong team from day one," says Rye. "I think hire number four was our HR business partner." This paid dividends as the team was "able to carry the load" while the duo completed the EMBA.

Indeed, Lin advises entrepreneurs considering an EMBA to "go for it", while Rye says creating a good team is the key to balancing the demands of the course and running a business. "If you can find the right people around you, you can delegate," he says. "And if you do not have the right people around you, maybe you are not doing something right."

'If you do not have the right people around you, maybe you are not doing something right'


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Business schools come to terms with Brexit

Changes to visa rules, the falling value of sterling, and growth in students from outside Europe have partly cushioned the impact of the UK leaving the EU — but recruitment of faculty is becoming a concern, reports **Jonathan Moules**



Incoming
Passengers arriving at London Stansted Airport

Moving from Germany to the UK to study for the Masters in Analytics and Management at London Business School was an expensive, bureaucratic challenge for Alex Scheuer.

The 23-year-old had to spend £800 to obtain a student visa and hundreds more on health insurance because, following Brexit, his German citizenship no longer gave him free care through the UK's NHS. He is still unsure whether he will look for a job in London after his degree.

"To be honest, I am not sure if I can stay here," he says. "I opened the door to come to London, but the higher wages are not enough to offset the increased living costs compared with where I was."

Despite all this, Scheuer has no regrets about coming to the UK and would recommend that other EU citizens do the same, at least to attend the country's best institutions. His most likely move after graduation next August will be to return to Berlin, but the payback from studying at the London school made it worth coming to the UK, he believes.

"The LBS brand sets you up for a career wherever you go," Scheuer says. "I made a calculation that my business salary in Germany should increase by about half, meaning that I can earn back the tuition fees I'm paying from my savings in two years."

Brexit has had some impact on the UK business education sector — which, at the top end, punches above its weight globally — but not as great as some feared.

Changes to the UK student visa programme, lowering a barrier to international students that predated the EU referendum, as well as the drop in sterling's value after Brexit was announced, have helped attract business students to the UK from the EU and beyond.

Postgraduate enrolments from EU countries for the 2022/23 academic year were down at 47 per cent of institutions surveyed by the Chartered Association of Business Schools (Cabs), the trade body for UK MBA providers. However, 50 per cent reported significantly higher intakes from other parts of the world this year, with a further 24 per cent reporting the same or slightly higher intakes from non-EU countries.

The latest survey of business school admission offices by the Graduate Management Admission Council concluded that growth in overseas applications to British MBAs compared with before the pandemic has largely offset a decline in domestic applications because of higher tuition fees.

The top schools, such as LBS, have benefited most. The percentage of students from EU nations at LBS's stucco Regent's Park campus has increased since the 2016 Brexit vote. The proportion of EU students enrolled on all LBS degrees rose from 21.1 per cent in 2021-22 to 23.4 per cent in 2022-23, according to Arnold Longboy, executive director, recruitment and admissions, at LBS. He credits, in part, the two-year graduate visa scheme introduced by the government in July 2021.

"While numbers of students from Europe have been relatively stable since Brexit, we have seen increased interest from a number of other regions," Longboy says, noting that there has been a rise in students from India and China since 2017-18, encouraged by the more attractive visa rules. "European students have not necessarily been displaced by this growth, however. As the school has grown,

No regrets
Alex Scheuer came from Germany to study at LBS



PHOTO: JASON ALDEN/BLOOMBERG



we have been able to incorporate the growth [from] certain regions into the growth of some programmes."

Britain's Universities and Colleges Admissions Service reports that EU applications for UK university courses as a whole are down 53.1 per cent since 2020, and business schools, potentially, have more to lose than most institutions. Deans at UK business schools are not only concerned about student numbers but also the loss of EU benefits for MBA providers through research funding and executive education training for those in work.

There are about 30,400 business students from the EU studying in the UK, contributing £1.3bn to the country's economy each year through course fees and off-campus spending, according to the Chartered Association of Business Schools (Cabs). Moreover, about a third of business school staff are from outside the UK and, of those, 14 per cent are from the EU, says Cabs.

Business schools in the UK received £18.2mn in research funding from EU sources in the 2020-21 academic year, about a quarter of the total. And, for the past five years, business and management research has received more funding from EU state bodies than the UK government.

'It does not feel like Brexit caused an exodus of staff or students but nor has this been without consequences'

"It does not feel to me like Brexit has caused an exodus either of staff or students, but neither has this been without consequences," says Robert MacIntosh, chair of Cabs. "It is definitely harder work recruiting and retaining staff from the EU, both because of the practicalities of visas and the perceived attitudinal differences they might face, making it harder for people to progress their careers here."

Perhaps the biggest strength of the UK's leading schools is that, despite Brexit, culturally they remain oases for the internationally minded — both students and faculty.

"For those on the MBA jobs market, the job opportunities here haven't changed substantially just because of Brexit," says Kathy Harvey, associate dean for MBA and executive degrees at the University of Oxford's Saïd Business School. "We have a very international mix and, because our students have global roles, some may be from outside the EU but are living and working there and choose to come to Oxford to study … We benefit from their experience".

Brexit has created new opportunities for teaching about geopolitics and dealing with uncertainty, Harvey says. "What things like Brexit do is bring to the fore issues about the relationship between the corporate world and government." Perspective is important, she adds: "Although we think of Brexit as being a few years down the road, it is still very early days in terms of what it will mean."

High ambition as space programmes take off

As big-name entrepreneurs target exploration, business schools are offering an expanding range of courses to support innovation with business nous

BY **IAN WYLIE** PHOTOGRAPHS BY **ILJA C HENDEL**



Aiming high
Carlos Velasco has experimented with aromas and virtual-reality headsets to enhance the appeal of food in space



Space has not traditionally been a place to enjoy delicious food. Without gravity to help clear their sinuses, astronauts are left with a dulled sense of taste.

But, at BI Norwegian Business School in Oslo, associate professor of marketing Carlos Velasco and colleagues are working to develop more appetising meals for space travellers. "Space captured my imagination early in life and we saw an opportunity to tackle some of the challenges that space travellers may face," says Velasco, a "multisensory marketing" specialist. "We want to position food — which is a multisensory experience in itself — beyond nutrition."

Together with academics at the University of Sussex in the UK and Carnegie Mellon University in the US, his team at BI Norwegian has developed three concepts for use in zero gravity. These include a mixing pod where solid spices are dissolved into food for flavour and texture; a 3D printer that astronauts can use to make food that enhances the emotional experience of eating; and small bites with distinct flavours from different cultures or moments in life that are combined with virtual and augmented reality.

It might seem a lot of effort for the few people lucky enough to travel in space. "But research and development in the space industry often results in innovations that also provide solutions for humanity's small and big challenges," Velasco argues, citing inventions such as freeze-dried food, home insulation and water purification systems.

Velasco's menu is still at the concept stage, but other European business schools are turning space-age ideas into reality. At the University of Exeter Business School in south-west England, Professor Nikita Chiu is launching an undergraduate module early next year on the "economy of space". Open to students from different disciplines and hosted at the university's Penryn campus, the module will offer a chance to examine past achievements — and missteps — in space. It aims to help students envision a more responsible and sustainable space future, says Chiu, a senior lecturer in innovation policy at Exeter and named Ad Astra Distinguished Fellow in Robotic and Outer Space Governance at the Space Engineering Research Center of the University of Southern California.

"There's no other sector more intriguing than space," says Chiu. "When we look up to the stars, we're actually looking into the past, and yet the space sector is very much about building for the future."

The course, she says, will draw on insights from business studies, the history of science and technology, engineering and global governance to understand how policy, technology and business intersect to enable the space economy.

"For those determined to make a career in the space sector, I hope they'll be able to apply what they've learnt with us to instil positive changes, bringing new ideas to an established industry and making it more diverse, more responsible and more sustainable," says Chiu, who is also a mentor for Space4Women, a network organised by the United Nations Office for Outer Space Affairs (UNOOSA).

'There's no other sector more intriguing than space. It is very much about building for the future'





Meanwhile, the first six students recently graduated from Europe's inaugural Space for Business programme, an executive education course for space professionals, entrepreneurs and companies interested in developing their ventures. The course is a partnership between Rotterdam School of Management (RSM) at Erasmus University, Nova School of Business and Economics in Lisbon, the University of St Gallen in Switzerland and the European Space Agency.

Space is the new economic frontier, says programme director René Olie, who is also associate professor of strategic management at RSM. Investment bank Morgan Stanley estimates that the $350bn global space industry could surge to more than $1tn by 2040. Yet, while many companies in this sector start with strong ambitions and ideas, they often lack the management knowledge and skills to grow their business.

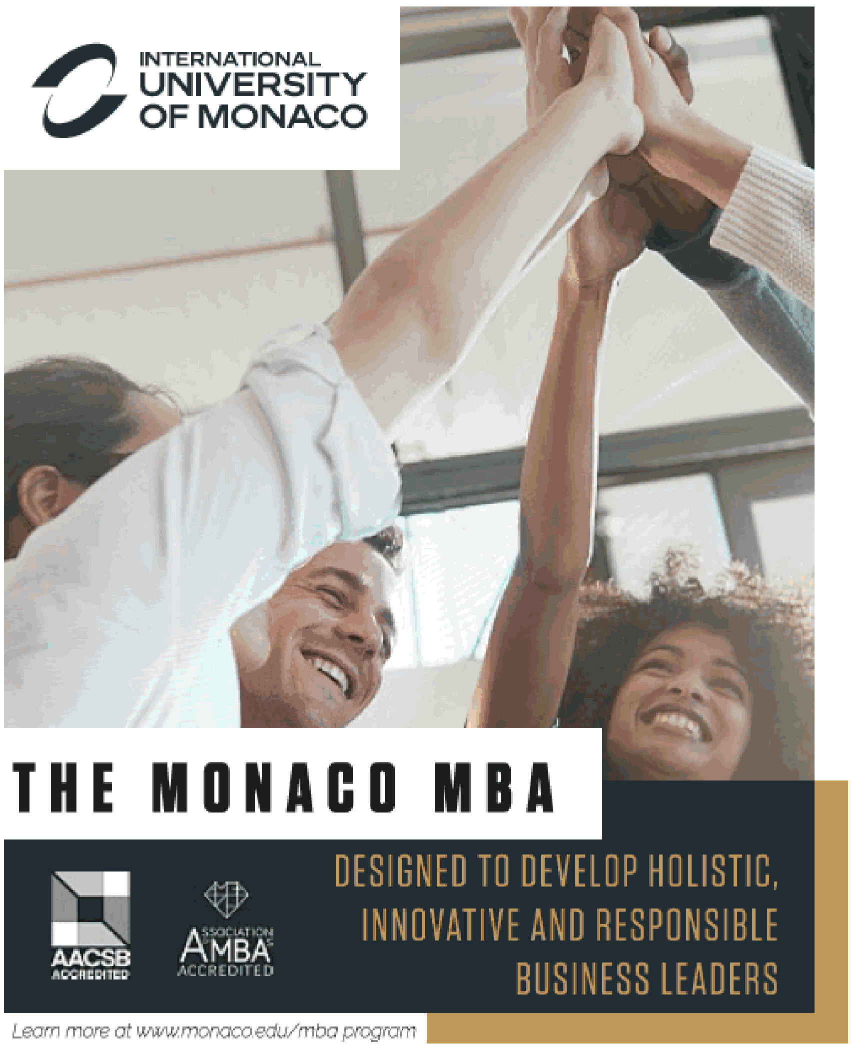
"Many in this industry have engineering backgrounds with limited training in business education," says Olie. "Another reason to start the programme was the rapid changes taking place in the industry which make it attractive for non-space entrepreneurs and companies to enter the industry, such as Elon Musk and Jeff Bezos."

The three schools began discussing the idea in 2019. On the programme, St Gallen focuses on space environment and space business models, Nova specialises in entrepreneurship and funding, while RSM takes a lead on the scaling-up process, innovation and leadership. The next programme will run in early 2024, with plans to expand the cohort to about 15-20 participants.

Space entrepreneurs are also being targeted by HEC Paris, which earlier this year rolled out a seed funding programme within its Creative Destruction Lab incubator. Launched in partnership with Toronto's Rotman School and Georgia Tech's Scheller College of Business, the nine-month programme has space for 40 start-ups as it seeks to lend scientific space research an entrepreneurial perspective.

But Franz Viehböck is one of the few people who can attest to the rare perspective that visiting space brings to life, business and education. Austria's first, and so far only, astronaut has been a speaker at Vienna-based WU Executive Academy's short programmes on pioneers. He has worked with Nasa and Boeing, and is now chief executive of steel product manufacturer Berndorf Group, whose employees he regularly puts through executive education at WU. "The view of Earth from space was overwhelming," he says. "You no longer see artificial geographical boundaries, but the big picture.

"There's a spirit of optimism in the aerospace industry, which means that, with courage and commitment, you can make many things happen," he adds. "Innovations are highly welcomed and appreciated, in contrast to many other sectors. It's about having the courage to be entrepreneurial and overcome setbacks — it doesn't necessarily mean having to fly into space yourself."


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Business and pleasure
A new wave of trading apps are incorporating social aspects

PHOTO: GETTY IMAGES/D3SIGN

Making business social

Apps that integrate social functionality into their core purpose are better equipped to thrive, says **Siddharth Venkataramakrishnan**

In the early 2000s, social media networks helped to transform the very idea of community. Building off the forums and bulletin boards of the early internet, companies such as Facebook (now Meta) and Twitter sold a vision of a "social" web.

That promise has largely soured: from 2016 onwards, social media became almost synonymous with scandal. Platforms' failures — on data privacy, misinformation, hate speech and more — have furnished business schools with examples of what not to do.

But the idea of social products remains powerful. For would-be entrepreneurs, finding a way to build community successfully could be the difference between an app becoming lost as one of many in the field, or a standout success.

The idea that a social function is vital to an app is not new. In 2020, investor D'Arcy Coolican wrote about the idea of "social+" — companies, such as TikTok or Fortnite, which focused on a single category and built a social experience around it.

"Any product that has a social component baked in has fundamental and asymmetric advantages over competing non-social products in that category: better growth loops, better engagement, better retention, better defensibility," wrote Coolican. "And, because social+ companies are network- and community-driven, that advantage accumulates over time."

One aspect highlighted by Coolican was the idea that the social feature is an integral part of the wider product, rather than an addendum. Simply tacking on the ability to share content with friends is not enough to make a product work.

One such app with an integrated social component is Shares, which targets ▶

REVIEW

Student views p45
Advice from those in the know

In real life p46
From pharmacist to venture capitalist



the world of retail stock trading. Harjas Singh, co-founder and chief product officer, says the app aims to build off the success of others, such as Robinhood.

Those apps saw a huge surge of demand in the pandemic, driven by a stimulus-fuelled trading boom. But, while there was an explosion of communities based around stock trading, they occurred off the app. In the case of retail trading, Reddit — home to WallStreetBets — was one hub. Others included closed or private channels on messaging apps such as Telegram and Discord.

"Retail investing has traditionally been a lonely and single-player experience," says Singh. "The current generation of retail investing apps have managed to build an efficient trading utility but have lacked a social experience."

These apps created an unnecessary level of complexity, Singh argues, with limited guidance or support for users. "That introduces a barrier to entry for users who find the financial domain daunting," he says.

Getting connected Apps such as Robinhood grew with retail stock trading but a new generation is making social functions integral

The Shares app's functionality resembles a social media platform as much as it does a retail trading app. Users can see what their friends have bought and sold — though the app does allow them to hide some stocks — encouraging discussion and social interaction.

But "social" should not be understood as limited to connecting contacts digitally. As Singh explains, Shares is also exploring how to build new networks through its experience with the app.

"We recently launched 'Communities' — a feature that allows users to engage in public discourse about investing and meet other like-minded investors to grow their network," he says. These could range from beginner investors to those investing in Tesla or Apple and others focused on crypto or Web 3.0 (a decentralised future model of the internet based on blockchains).

Loop, a fintech launched last year, is also based around the idea of seamlessly integrating social aspects with another business. It gives users the facility to borrow or lend money to friends for free, enabling them to track what has usually been informal lending.

"The emphasis is on customers' social groups and interactions," says Paul Pester, Loop's founder and executive chair. "Financial services don't typically think that way, they think about accounts and transactions."

One third of people regularly borrow money from family and friends, says Pester, with about £12bn outstanding. Loop's design, which mirrors elements of chat apps such as WhatsApp, focuses on digitising a common social experience.

In contrast to the model of traditional social media, which has been criticised for the way it can be used for advertising or political purposes, these newer products make money in other ways.

Loop, for example, monetises its "badge" system, which measures how promptly people repay loans. This effectively acts as a credit score, allowing users to get better deals. "We're also looking at offering a Loop Kitty, enabling lending to groups of friends," adds Pester.

For business students, the lesson from these apps is that, while social media companies may be facing tough times, there is a stronger pathway than ever for businesses that can find a way to embed social ideals and community in their wider product.

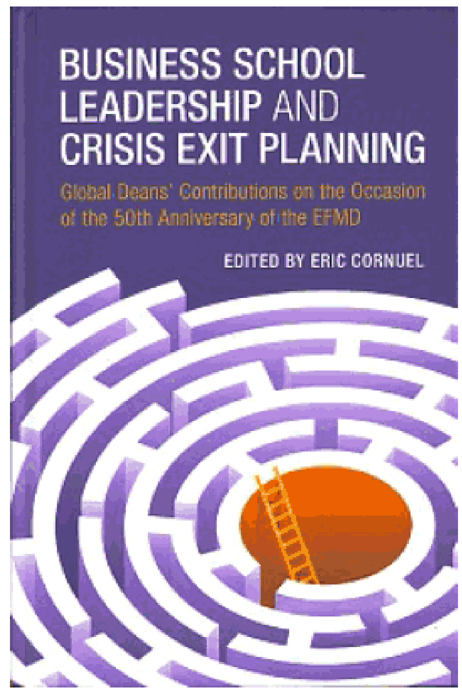
"'Social' is a universal and timeless need," Coolican wrote. "At our core, humans are social beings. We crave connection and community — beyond social media — and things start to fall apart when we don't have it."

'The current generation of retail investing apps have an efficient trading utility but lack a social experience'

PHOTO: OMAR MARQUES / SOPA IMAGES/SIPA

Tough lessons in hard times

A new book reveals what business school deans learnt from Covid — and what they may have missed



Business School Leadership and Crisis Exit Planning: Global Deans' Contributions on the Occasion of the 50th Anniversary of the EFMD. Eric Cornuel (ed). Cambridge University Press

The effects of the Covid-19 pandemic hit Jean-François Manzoni hard. IMD, the Swiss business school he leads, is particularly dependent on fees from executive education — short, non-degree courses. These were squeezed sharply as his international corporate clients postponed or cancelled as they went into lockdown and tightened budgets to adjust to the uncertain times of 2020-21.

Reflecting on how he coped, Manzoni writes with a certain understatement: "I experienced a very interesting case of 'theory meets practice'." He describes the importance of a management style that is engaged and aligned with staff, and concedes he sometimes withdrew too far from colleagues with whom he disagreed.

Manzoni highlights the importance of regular communication with his team; and of "offensive" actions to invest in innovation, despite the pressures to take a more defensive stance. He also singles out the need for managers to look after themselves during a crisis, through exercise, nutrition and sleep, as well as by showing gratitude and compassion to offset the inevitable periodic anger, grief, fear and frustration they experience.

Manzoni's frank reflections are one of the stronger chapters in a recent collection of essays by business school leaders on responses to the pandemic, humanising wider management thinking by drawing on personal decisions.

The pandemic was 'a very interesting case of "theory meets practice"'

This is primarily a specialist book for deans, while providing some broader insights into the evolving culture of business schools themselves. At times, it feels like a form of group psychotherapy; at others, a primer of responses, a few of which seem a little self-indulgent, introspective, overly detailed or banal.

It was written partly to commemorate the half century since the creation of the European Foundation for Management Development (EFMD), which now has nearly 1,000 members and oversees a highly regarded accreditation process for schools around the world.

The book seeks to explore how Covid accelerated or instigated significant change — something Peter Tufano, former head of Oxford's Saïd Business School, compares with evolutions of five leading US institutions during the second world war. Some took a transformational approach to leadership and were able to bring about significant long-term change.

As Eric Cornuel, EFMD's president, concedes, there is a danger that the views in this book already seem out of date, as circumstances have changed and the pandemic has seemingly begun to fade — if only because of subsequent developments, not least surging inflation, rising energy prices and food insecurity, driven in part by Russia's war in Ukraine.

Indeed, while the Sars-Cov-2 virus may still be widely circulating, it has since been overshadowed by the fallout from the gratuitous loss of human life, physical disruption and political destabilisation of the post-cold war settlement triggered by Vladimir Putin.

The chapter by Valery Katkalo, dean of the Graduate School of Business of Moscow's Higher School of Economics, reads like a painful historical relic, with the strong reputation of the institution he charts since undermined. Academics there and elsewhere in Russia have pledged loyalty to the Kremlin or been dismissed or fled abroad, and corporate clients and prospective students can be hesitant to attend.

Elsewhere, Yuan Ding, head of the pioneering China Europe International Business School (Ceibs) in Shanghai — itself partly founded and backed by EFMD — alludes to his country's lockdowns and the restrictions that have been imposed on travel and classes.

But he also cites António Guterres, the UN secretary-general, on the transformational forces of "climate change, the mistrust of leaders, increased geopolitical tensions and the dark side of the technological revolution".

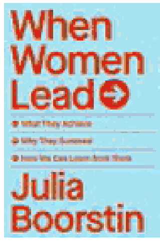
The more aggressive and repressive actions by Putin and his Chinese counterpart Xi Jinping — not to mention India's prime minister Narendra Modi, whose policies are not described in a chapter on the Indian School of Business — are part of the wider forces reshaping business education.

Many of the authors in the book share a common view on the need for business schools to adapt and embrace sustainability, social justice and stakeholder capitalism. Some call for a more explicit embrace of "fuzzy" humanitarian training alongside "techie" hard skills. Others are frustrated that more is not being done by their own colleagues to bring about change — or by businesses in pushing for change by shifting their recruitment practices.

Several of the contributors also express concern about the gulf between academia and business, with too much focus on abstract theoretical publications that are insufficiently relevant, applied or focused on societal issues. There was also, they say, an absence of output that would have been of value to decision-makers during the pandemic.

Ironically, for a group of deans largely writing about their own institutions, the book lacks a strong analytical thread exploring which schools emerged from Covid-19 in better shape or whether there were any common approaches in different regions of the world, not least in EFMD's historical base in Europe.

While employers and regulators need to do more to press for reforms, the message is perhaps first to each business school: heal thyself. ANDREW JACK ▶



When Women Lead: What They Achieve, Why They Succeed, and How We Can Learn from Them, by Julia Boorstin. Simon & Schuster

As a business reporter for the past two decades, first at Fortune magazine, then for CNBC, Julia Boorstin has interviewed hundreds of men in power. But it is the women holding positions at the top in the male-dominated world of business who were the inspiration for this book.

The female leaders featured in *When Women Lead* stood out for Boorstin because of their ability to thrive against the odds, by overcoming various pressures, obstacles and double standards. It made her want to understand more about what made these women special, why they succeeded and what can be learnt from them.

Through a combination of research and interviews with about 120 women, Boorstin examines how they were able to "turn genuine grievance into entrepreneurial grit… to be scrappy, flexible, thick-skinned and innovative" enough to make it. The focus is on leaders of start-ups; the writer says the challenges facing female tech entrepreneurs are particularly high stakes, given the huge impact tech companies have on the way we live and work.

As Boorstin points out, this is especially important because of the vast gender gap in investment: between 2011 and 2020, start-ups founded solely by women secured an average of only 3 per cent of venture capital funding globally.

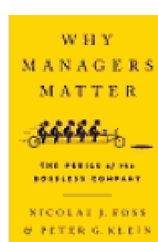
The women featured range from Goop founder and film star Gwyneth Paltrow to Sallie Krawcheck, chief executive of female investment company Ellevest, and Julie Wainwright, the former chief executive of online marketplace TheRealReal. While their leadership approaches were all varied, Boorstin identifies some shared attributes, such as a tendency to search for structural solutions rather than quick fixes, and a willingness to show vulnerability.

The book is split into three sections: first, how and why women tend to build strong companies; then how they tackle complex problems; and, finally, the new patterns female leaders are creating to break free from old male-dominated systems.

Boorstin's outlook is ultimately hopeful: that having more women leaders will help make the business world a more equitable place, and that the broader lessons shared here will help others succeed. AMY BELL



Leading role Gwyneth Paltrow, actress and founder of Goop, is among those examined in 'When Women Lead'



Why Managers Matter: The Perils of the Bossless Company, by Nicolai Foss and Peter Klein. PublicAffairs

The current trend of talking about "bossless" companies — for example, founders claiming that their work is so much fun that it is not actually a job — is obvious rubbish. But "flatland", the kind of freewheeling corporate structure lionised by the tech start-up community, is actually something to be seriously concerned about, according to the authors of this book.

They give examples of companies that say they operate without hierarchies — notably US computer games developer Valve — and highlight the failings in this approach. Nature abhors a vacuum, they note, meaning that what usually happens is that strong characters take on the roles of leaders in these organisations. It all sounds a lot like the novel *Lord of the Flies*.

The message, set out over 314 pages, is that hierarchy is not the problem. Instead, the focus should be on improving the way managers lead. Much of the book is spent explaining how this can happen.

The authors have considerable experience of assessing business models. Peter Klein is a professor of entrepreneurship and chair of the department of entrepreneurship and corporate innovation at Baylor University in Texas. He was also a senior economist at the US Council of Economic Advisers in the Clinton administration. Nicolai Foss is a professor of strategy at Copenhagen Business School.

They blame the media, in part, for misrepresenting the failure of large companies such as Kodak, Xerox, Blockbuster and Toys R Us as a problem of the traditional corporate hierarchy, rather than the failure to notice deep-seated changes in technology — although, presumably, the latter could also be a symptom of over-hierarchical management.

They also note that, for all the excitement about tech start-ups, the top 10 largest companies worldwide by revenue — Walmart, Sinopec, Shell, China National Petroleum, State Grid, Saudi Aramco, BP, ExxonMobil, Volkswagen and Toyota — are all run as conventional managerial hierarchies. JONATHAN MOULES

PHOTOS: BRIAN STUKES/GETTY IMAGES

Voices of experience

Business school course participants past and present tell **Ian Wylie** what they have learnt from their studies



Diego Casadei
Italian/Swiss. Executive MBA student, IEDC Bled School of Management, Slovenia. General manager, Cosylab, Switzerland

What was your biggest lesson?
After 20 years in an academic environment developing particle and radiation detectors for three space missions, I joined a provider of control systems for proton therapy for cancer. Appointed general manager, I wanted to address my lack of formal training in business administration. With my training as a scientist, the biggest obstacle was understanding there are many problems for which there is no right answer. The teaching approach of IEDC, based on case studies, is a great way to push students to examine situations from a variety of points of view. In a typical case-study discussion, I change my mind four or five times, thanks to open discussion with my colleagues, mediated by the teacher. I have learnt that, as a manager, I should know which questions to ask, look for diverse opinions, then decide on a course of action and be accountable for it. It takes more courage to manage people than to find a solution to a scientific or technical problem.

'It takes more courage to manage people than to find a solution to a scientific or technical problem'



Roméo Poncet-Labouche
French. Masters in Management graduate, EMLyon, France. Co-founder of Cryptocurrency company Mon Livret C, France

How did you choose your business school?
I have always envisioned entrepreneurship as my future, which is why I applied for the Masters in Management, and studying at EMLyon was a logical decision. The school is renowned in France for its dedication to innovation and entrepreneurship, and its progressive incubator helped me make up my mind. The most important thing I learnt was the need to dare as an entrepreneur. You can have the greatest ideas in the world but, if you don't put them into practice, they will never flourish. EMLyon pushes students to come up with ideas and projects of all sorts and I'm grateful for that. I was pleasantly surprised by the diversity of students and their desire to start projects. Some people just navigate school by attending courses. Others try to create and innovate. I felt like I was at the right place to find these people — and, indeed, I met my co-founder there.



Paul Beville
British. Executive education programme, Henley Business School, UK. Senior internal audit manager, Invesco, United Kingdom

What surprised you most?
The different experiences and ways of handling different situations that I learnt from other participants in the Henley Leadership Programme. The diverse careers and industries of the participants, ranging from financial services to charity to media, helped to illustrate how effective leadership can be implemented in differing environments. The overall experience at Henley was very positive and enlightening — the setting is a breath of fresh air and allows you to immerse yourself in the course. I enrolled to equip myself for success in the next stage of my career, and the Henley programme matched my requirements closely, with a focus on increasing confidence and self-awareness, and my ability to handle difficult situations. Reading past case studies showed a diverse range of previous students at different career levels.



Syreel Mishra
Indian. MBA graduate, Trinity Business School, Dublin. Assistant manager, climate change and sustainability Services, EY, Ireland

What did you enjoy most about business school?
I had the honour of working with diverse peers on a programme that opened my mind to new ways of thinking and challenged me every day to think and be better. I learnt that diversity of thought and experiences in a team can greatly elevate the outcome — it prevents groupthink as solutions are developed for various business challenges. I have always been passionate and driven about the environment, having worked at various UN organisations and environmental foundations across Europe and Africa. The private sector plays a vital role in building a climate-resilient and sustainable world, and I wanted to expand my business acumen so that I could lead on and drive high-impact ESG projects in the corporate world. The climate change journey is evolving rapidly and needs cohesive and collaborative action from all sectors. I hope I can play my part.



Isabelle Loock
German. Master of Finance graduate, Frankfurt School of Finance & Management. Banking analyst, Jefferies, Germany

Why did you choose Frankfurt?
The city is a financial centre that has its own international but traditional charm. Being this close to top-tier companies, consultancies and banks is not only very motivating but also provided the opportunity to study and apply for internships or student placements. Frankfurt School of Finance & Management has an atmosphere all of its own in the middle of the city. I was surprised at how time flew by on the beautiful campus. When I wasn't studying, I was spending time with new friends, enjoying on-campus events or having a beer on the roof terrace. I was also surprised by the possibilities Frankfurt provided from the very beginning: someone — be they a professor, a study adviser or a programme manager — was always available to offer help when needed.

Finding the right prescription

Sanchita Pasi on how an MBA and smart networking smoothed her shift from pharmacist to venture capitalist

I am a pharmacist, a painter and a freshly baked venture capitalist. I spent the first five years of my twenties studying science. I loved science, growing up; I loved the human body. And, having been born in India to Indian parents, a good education was always high on the list of priorities. That is how I ended up as a pharmacist.

Aside from India, I lived in Egypt for a while. Then, when I was 12, my mom and I moved to Italy, and I grew up in a very small town of about 8,000 people. I was the only Asian in class, both in middle and high school. Before then, I had only lived in big chaotic, bustling cities, like Cairo and New Delhi, so it was a culture shock.

It was in Italy, at the University of Milan, that I did my doctorate in pharmacy. I then started working at Abbott, the global healthcare company and, shortly after that, about two years ago, I was given a project to lead the commercialisation of a diagnostics start-up for heart disease.

It was quite a high-profile project and it gave me great exposure. I got to interact with the diagnostics start-up's team, as we worked on integrating them into our portfolio, as well as Abbott's corporate ventures department. I think that was the first time I had seen, at a company, a team that was solely focused on what the future would look like. That is when I realised where I wanted to be.

European ties
Sanchita Pasi in Barcelona, where she was an intern at health-focused Nina Capital



But I lacked that financial background and realised I needed to transition. I had always toyed with the idea of an MBA — I used to talk about it with my dad, who has always been my career guru.

The corporate world was amazing — it gave me a structured framework and mentors who are still on speed dial for any decision I need to take in life — but to move into venture capital I needed to step away from the corporate world. And, the more I grew, the more I realised how the corporate world can be quite restrictive and hierarchical — and I wanted to be in an entrepreneurial environment.

I chose to do my MBA at SDA Bocconi in Milan for three reasons. First, I was tired of travelling and wanted to come back home. Second, an MBA is also a huge financial investment, and picking a school with a good reputation can really help you land your dream job and pay off loans more quickly. Bocconi jumped significantly in the Financial Times rankings of business schools last year, which is why I decided to go for it. The programme received a massive boost and it is now competing on the same field as some of the big US players.

Third, I felt that Bocconi is essentially a people business. Its network in Italy and Europe is priceless, and I think that is embedded in its DNA. For example, the MBA cohort is about 100 people, but the teams you learn with change almost every term. That means you really maximise your people-learning skills — you are never in your comfort zone. And venture capital is all about networking. It is very much a hipster community where people love to talk, share experiences and mentor.

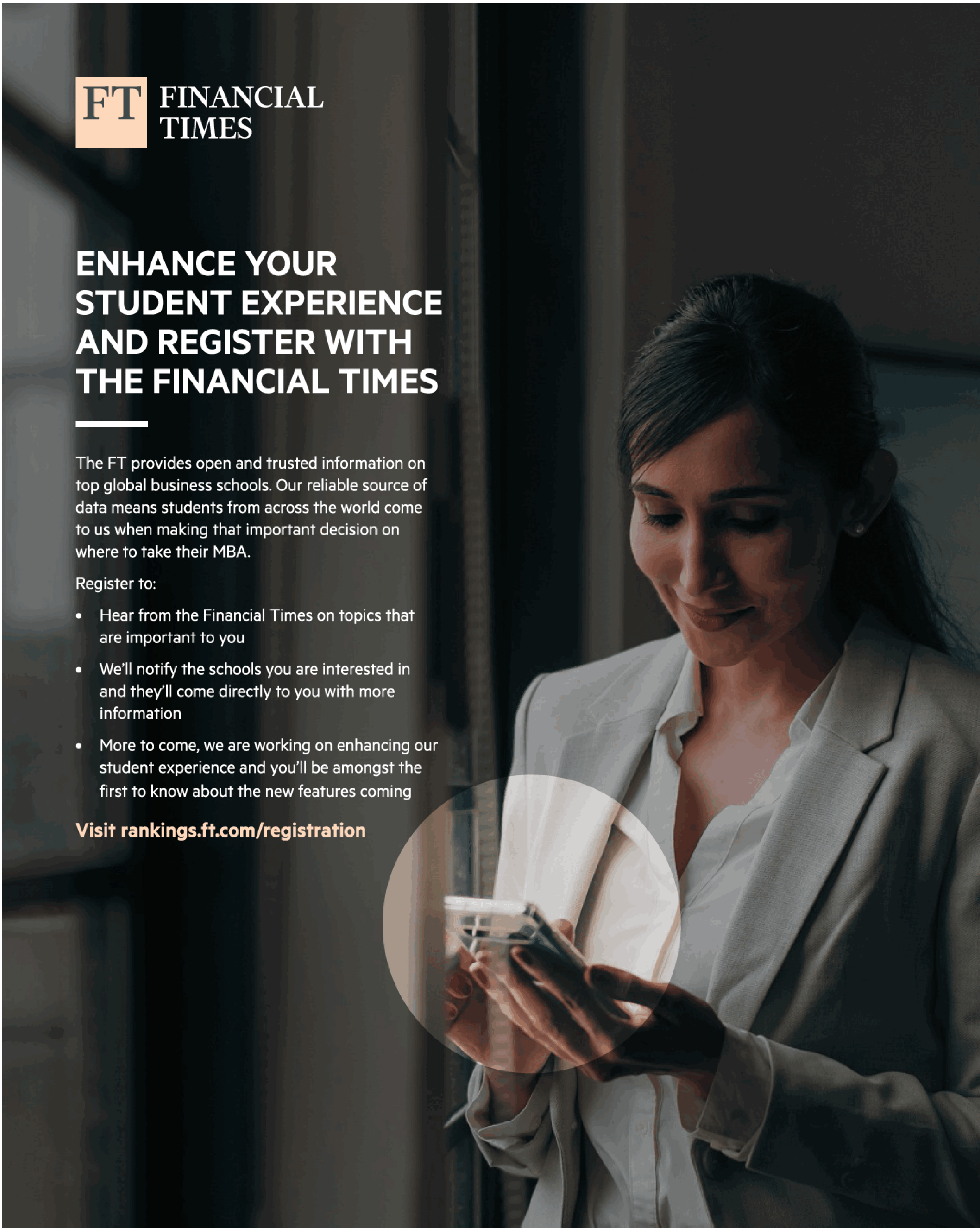
I also gained great hands-on experience by participating in the six-month MBA Impact Investing Network and Training, a programme where students from top business schools in the US and Europe learn to source and assess impact investments and then compete at a live pitch event. We had to imagine we were starting a fund: where did we want to invest? What would our criteria for investment look like? We then had to scout for companies that fitted those criteria. We spent a lot of time talking to founders, their advisers and potential customers.

Bocconi also helped me a lot by connecting me with the right people at the right time. I knew that I wanted to stay in healthcare investing and Bocconi's careers service introduced me to people who had strong ties with European health-focused venture capital firms. That is, ultimately, how I secured my internship at Nina Capital in Barcelona.

I am now back in Milan and have just joined Sagana Capital as a senior investment manager. It is going to be very challenging — I still have so much to learn. Making a career switch has been a humbling experience. I will also continue my career as an abstract painter — I had my first exhibition this year in Milan. So, yes, I'm excited.

As told to Patricia Nilsson

PHOTO: POL CARTIE


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